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ADDRESS.

CHAIRMAN'S ADDRESS.

Presented to the Section on Physiology and Dietetics, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY RANDELL HUNT, M.D.
SHREVEPORT, LA.

Welcome, gentlemen of the AMERICAN MEDICAL ASSOCIATION! Welcome to this Section, assigned as a place of instruction and enjoyment, for the communication of knowledge and the circulation of thought! And specially welcome to this hall set apart for the science of physiology and dietetics.

The chief end of all medicine is to secure to humanity the blessings of health, and this can only be attained by the scientific education of the physician. It is accordingly the paramount duty of all medical associations to foster and promote higher education.

The chief cause of disease is ignorance; the foundation of health is knowledge, for knowledge is the parent of science and her natural and only safe guardian. Impressed with these truths, physicians are advocating thorough education—education involving comprehensive knowledge of the laws of Nature and philosophy—a knowledge indispensable to thorough appreciation of the dignity of the science and art of healing.

The Supreme Being, when he made the universe and created matter and all classes of beings, animate or inanimate, gave to every class its conditions and appropriate functions. Order, proportion and fitness pervade the whole. The world around us and the world within us are ruled by immutable law. We see, we feel, we regard with wonder and admiration the rule. Our very spirits, that seem so spiritual, so subtle, so free, are subject to it. The material world, the heavenly bodies, the earth, and the different elements of the universe have their laws, beasts have their laws, man his laws. The celestial as well as the terrestial world knows, and, without swerving, observes and obeys its prescribed course.

This truth is illustrated in the grandest and most sublime of the works in nature, and in the least and lowliest—in the laws that regulate the planetary motions, the range of planets, suns, and adamantine spheres wheeling unshaken through the void immense, and in those which form a drop of water. The vastness and multitude of the celestial bodies, the laws which astronomy in its higher branches discloses and applies, the distances which it spans, the periods which it estimates, impart a sublimity which lifts the soul to the heavens. The law of gravitation is the most universal law known to us. It prevails apparently through all space, but does not prevail alone, for its function is to balance other forces, of which we only know that these again are needed to balance the force of gravitation.

Each force, if left to itself would be destructive of the universe, for the force of gravitation prevents the centrifugal force from flinging the planets into space, while centrifugal force prevents gravitation from dashing them against the sun. The orbits, therefore, of the planets, with all that depends upon them, are determined by the adjustment between the law of gravitation and other laws that are less known, so as to produce and maintain the existing solar system. This grand example of the principle of adjustment gives no idea of the extent to which the principle is required and is adopted in the works of nature.

The revolution of the seasons, seed-time and harvest, depend on the law of gravition, in this sense, that if the law were disturbed, or if it were inconstant, they would be disturbed and inconstant also. But the seasons equally depend on a multitude of other laws—laws of heat, laws of light, laws relating to fluids, to solids, and to gases, and to magnetic attractions and repulsions—each of which laws is invariable in itself, but each of which would produce utter confusion if it were allowed to operate alone, or if it were not balanced against others in the right proportion. The seasons depend not only on the facts and laws which astronomy reveals, but on other sets of laws revealed by other sciences, such as chemistry, electricity and geology.

Chemistry abounds with illustrations of the law of forces in mutual adjustment, for the forces that determine chemic combinations all work under sharp definite rules. Some of the laws which regulate this combination are wonderful and beautiful, of great exactness, having invariable relations to numbers and proportion. Each elementary substance has its own combining proportions with other elements, so that, except in these proportions, no chemic union can take place at all. And when chemic union does take place, the compounds which result have different proportions employed. The same elements combined in one proportion are sometimes a nutritious food or a grateful stimulant, soothing and sustaining the powers of life, while, combining in another proportion, they may be a deadly poison, paralyzing the heart and carrying agony along every nerve and fiber of the animal frame.

The whole progress of plants from the seed to the root, and thence from the root to the seed again, the method of animal nutrition, digestion, and all other branches of vital economy, are not left to chance, but are performed in a wondrous manner, and guided by unerring rules laid down by the great Creator. Thus it is through the whole of nature; laws everywhere—laws in themselves invariable, but so worked and so adjusted as to produce effects of inexhaustible variety, by being pitched against each other and made to hold each other in restraint. Not a tree, not a flower, not a blade of grass, not even a drop of water, not one of

the countless varieties of form in clouds, but is ruled by law, by forces which are free only within the bounds of natural law:

> All are but parts of one stupendous whole,
> Whose body Nature is, and God the soul;
> That changed through all, and yet in all the same,
> Great in the earth as in the ethereal frame,
> Warms in the sun, refreshes in the breeze,
> Glows in the stars, and blossoms in the trees;
> Lives through all life, extends through all extent,
> Spreads undivided, operates unspent;
> To him no high, no low, no great, no small;
> He fills, he bounds, connects, and equals all.

Advancing knowledge of physical law has been constantly accompanied with advancing power over the physical world, and has enabled us to do a thousand things which a few centuries ago would have been considered supernatural. Physiology shows the structure of man, the superiority of the human organization, its various functions, and all that is connected with the animal life of man, over those of the rest of the animate creation. And even here in man, the highest type of God's creative genius, natural law is paramount and immutable. Disease is a deviation from health; a deviation consisting in the alteration of function, property or structure of some tissue or organ, owing in most part to a disregard or ignorance of natural physiologic, hygienic and dietetic law. Disease is thus an abnormal performance of those processes that constitute life, a knowledge of which must necessarily precede the practice of medicine.

ORIGINAL ARTICLES.

THE MILK-SUPPLY OF CITIES: CAN IT BE IMPROVED?

Presented to the Section on State Medicine, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY HENRY O. MARCY, A.M., M.D., LL.D.
BOSTON, MASS.

Sanitation has made rapid strides in the protection of the public from a great variety of dangers, and more and more each year are emphasized the interdependence and correlation of the entire body politic. This is especially true in urban life, and many of the relations which were thought to be purely personal and individualistic are now accepted as common, and are to be most satisfactorily dealt with under general supervision and control. The development of the water-supply and sewerage of cities is an illustration of common needs, more and more demanding a union of public interests, supervised by men of the highest talent, specially trained for this service.

Modern science has pointed out many dangers to which the individual is exposed, and it is with special satisfaction that we refer to the labors of this generation in having defined the causation and limitation of a large class of the diseases to which the human race is liable.

Ever present—from birth to death—is the daily need of supplying the wants of the system with materials from which the vital economy extracts the products necessary to repair the waste and rebuild the organism. During the first year of life this is furnished almost exclusively by the maternal milk, or that from animals, and nearly every individual incorporates milk daily into his supply of food.

In nursing, this complex animal product is conveyed directly, without contamination, into the stomach, and therefore becomes easy of digestion and assimilation. We have learned to know that milk is an excellent culture-medium for certain forms of bacteria, and that, because of these and other contaminations, it rapidly undergoes changes which are deleterious to the animal organism, and may be the means of diffusing disease in a variety of forms. In a very brief period after its production it becomes entirely unfit for food.

It is generally accepted that by far the larger single cause of mortality during the first year of life is owing to improper feeding—"bottle-fed infants." Dr. S. W. Abbott, Secretary of the State Board of Health of Massachusetts, in a recent paper entitled "The Saving of Children," says: "I have carefully examined the list of diseases in which an increased death-rate has occurred in Massachusetts, and have no hesitation in stating that boards of health in our large cities will find a fruitful field of work in the study of the question of infant mortality, its causes and the prevention of its excessive prevalence. Another reason for encouragement in this special direction is the fact that many lives saved in infancy are saved for a long and useful life, and are in fact so much added wealth to the community at large."

Dr. Schlossman says: "The death of every child constitutes a definite loss of national wealth. On the other hand, energy expended in saving the lives of the aged from the inroads of disease at the later periods of life only saves this class at a period when they are most likely to be a burden to the community."

Dr. Abbott quotes statistics to show that the death-rate of children under one year of age, per one thousand births, in Ireland from 1884–1888, was only 94, which is the lowest figure in foreign countries. In England it was 144, in France 165, in Massachusetts varying from 150 to over 200, and in the large cities often exceeding this latter percentage. It is generally conceded that this abnormally high percentage of death-rate is largely due to improper feeding.

How shall this, perhaps the most important of all our food supplies, be economically and safely furnished the public? is the subject to which I invite your attention and in its solution solicit your earnest co-operation. Manifestly, the first subdivision of the subject will be the source of the product—the animal furnishing the milk. Since man has almost exclusively selected the cow for this purpose, we will limit our inquiry to this animal. The improvement of the breeds of cattle is manifestly important, although the time at my disposal will not permit the discussion of this branch of the subject. It must be accepted that the animal furnishing the milk should be maintained in a state of health. This necessitates a proper feeding, healthy surroundings, a good water-supply, a certain amount of daily exercise out of doors, and protection from exposure and cold. It might be assumed that the interest which the owner of a dairy has in his herd, from an economic standpoint, would be a satisfactory guarantee in the securing of the public protection. Unfortunately, however, this is not true, and from a narrowly selfish standpoint the owner of the cow oftentimes considers her only as a machine from which to realize the largest possible product. Since this is estimated and sold as quantity rather than quality, the attention is often directed to the supplying of food products, accepted by the owners to be in

a certain degree deleterious to the health of the animal, but recognized as stimulating to the milk secretion, as well as not seldom cheapening the keeping expense of the animal. Articles generally known as more especially damaging are the distillery products and certain imperfect forms of ensilage, more or less universally contaminated by various fungoid growths known as moulds, etc.

The owner's self-interest is also oftentimes, if not commonly, brought into collision with the public good in the employment of too little and a low grade of service in the care of the animals. This is at present very generally recognized in careless and dirty methods of milking, especially during the period of housing made necessary by northern winters. The filth incorporated in the milk by the ordinary methods of stable-milking is a source of serious damage to the product, and if observed by the average consumer would be stigmatized as digustingly filthy.

These interests of the milk-producer, resulting from ignorance, carelessness and worse, so plainly conflict with those of the consumer, that the public has a right to demand that all the sources of milk-supply production shall be constantly kept under public inspection and control, viz., that a healthy animal furnishes a clean and healthy product for public consumption.

The second subdivision of the subject is: Having a good product furnished by the dairy, how can it most safely and economically be distributed to the consumer? By general consensus of opinion the clean milk should be cooled as rapidly as possible, since bacterial decomposition goes on slowly at low temperatures, and immediately put up in sterile receptacles. Since tin is in common use, boiling water and steam furnish safe and economic methods. When glass is selected, and for many reasons it is much to be preferred, after washing, sterilization is easily effected by dry heat. Once put up for the public use, the product should be exposed as little as possible in reaching the consumer. This is the great objection to the large can.

Some years since, as chairman of a committee having public inspection of the milk-supply of the city of Boston, we found the greatest contamination resulted from the dirty methods practiced by small dealers, in recanning in a filthy stable in pints and quarts for family use. This was often labeled as one cow's milk, and especially recommended for the use of children. The cheap corner grocery is another source of milk defilement, which oftentimes is kept in dirty surroundings, even living rooms, and sold in small quantities for the use of neighbors.

Until within a comparatively brief period milk-inspection, although demanded by law, has been a perfunctory and superficial affair. It was deemed of chief importance to prevent dilution and the incorporation of foreign substances. Dilution with pure water may be the least damaging to the consumer, although he does not obtain the full value of his purchase money, while the addition of coloring matter to give the milk a rich, creamy appearance, is not especially injurious.

The real dangers with which the public has to contend lie in the contaminations already referred to. Besides these there is the lack of economy necessitated by the rapid distribution of a product which deteriorates every hour after its production so rapidly that by the third day it becomes a waste product.

We admit that the problem is by no means easy of solution, and that in the aggregate it is of enormous magnitude; and yet modern science seems to be extraordinarily lacking in furnishing better means for supplying a universal want. Other food products are cared for much more satisfactorily, so that the consumer has his table supplied economically and safely from the markets of the world. We cease to marvel at the fresh salmon daily distributed, which comes to us in good condition from Alaska. We find poultry of the autumn, fattened upon the western cornfields, in good preservation during the months that follow; even the mutton from New South Wales vieing in the English market in quality with the Southdowns of the previous day's killing, which has, for its chief rival, Chicago beef, noted for its excellence in the great centers of both continents. Certain cheese and butter products have wide reputation, and deservedly so, because they are prepared from healthy dairies in the pure air of high Alpine fields. The last few years have seen a revolution in the manufacture of butter and cheese from milk brought to a common center from a large surrounding district. The products are so manifestly superior that they bring higher prices in the open markets. These may be called *concentrates* of milk, and, because of their minimizing in bulk and keeping properties, are easily transported long distances to the great centers of consumption. This should pertain equally to the milk-supply, and in the abstract is a problem of comparatively easy solution.

In this paper I purposely avoid even touching upon the important questions of milk composition and the testings of its value, since in a general way, these are not only well understood by the medical profession, but also by the body politic. Sufficient for our present purpose has been the reference already made to the constant contamination to which milk is subject, from the moment of its production until its consumption. It is a well-known scientific fact that aseptically withdrawn from the healthy udder into an aseptic receptacle, and sealed at once without exposure, milk remains indefinitely in a state of preservation. By the present means employed for its abstraction from the animal, protection from contamination is impossible, although to me it seems evidently feasible that machines for milking could be adopted, which, in very large degree at least, would be preventive of this source of infection. Once having occurred, however, some means must be taken for its disinfection. This may be said to be readily done by boiling, but heat thus applied not alone changes the taste of the product, but also its composition, both the fat and casein being affected by it, and rendered far less nutritious and digestible. Heated to a lower temperature, about 170 degrees F—so-called Pasteurization—the cream and caseous products are less changed and the larger portion of the bacteria destroyed. This gives a safer milk and is much more economic in consumption, because it will keep much longer without spoiling.

Milk concentrates, the larger portion of the water having been extracted and condensed by evaporation in vacuo, until a semi-solid is the resultant, have long been familiar to all. They have their advantages and are considered under certain conditions well nigh indispensable articles of food. Their use, however, is comparatively exceptional, because of undesirable changes resulting from the application of heat. By the abstraction of the water from milk, its bulk is les-

sened about 87 per cent. If removed without change of the solids, the addition of this amount of water would again give fresh normal milk. Removal by processes that would destroy deleterious contamination occurring in its production would render the product as permanent as that of butter and cheese, and as easy of transportation. The economic resultant would diminish the cost to the consumer about one-third, and give an article of food of far greater value and safety. How can it be effected?

I am indebted to my friend, William T. Sedgwick, professor of biology in the Institute of Technology, Boston, for much valuable information upon the subject of milk contamination, and the State of Massachusetts may well consider itself fortunate in the services which he has already rendered, in securing a better milk-supply. His publications upon the subject are more or less known to the medical profession. From a large series of bacteriologic investigations the following deductions are drawn:

Normal country milk produced by clean, healthy animals, drawn by hand with great care into sterilized bottles and planted quickly, yielded as an average of several trials 530 bacteria per cubic centimeter—the cubic centimeter roughly estimated as equal to a cube one third of an inch, or to a small thimbleful. When, however, the milkman used the ordinary milk pail of flaring form, seated himself with more or less disturbance of the bedding, and vigorously shook the udder over the pail during the usual process of milking, we found that the numbers were very much higher, namely, an average of 30,500 per cubic centimeter, at the end of milking. When such milk is found upon the tables of country families a few hours later, it naturally shows still more bacteria, doubtless because those with which it was seeded have had time to multiply. The average of fifteen such samples from the tables of families in Jamaica Plain, Cambridge and Auburndale, was 69,133 per cubic centimeter. In these cases, moreover, the conditions of the cows and of the stables were exceptionally good, while the milkmen were much more than ordinarily clean and careful.

It follows from these results that there are two principal sources of the bacteria in the milk, viz., contamination during the act of milking, and the natural multiplication of the bacteria thus introduced during the interval between milking and the consumption of the milk. The result of these investigations was to show that even under the most favorable conditions cow's milk, as ordinarily drawn becomes, almost necessarily, infected with hosts of putrefactive bacteria at the very outset. Under worse conditions, with unclean stables and dirty milkmen, to say nothing of half-cleaned pails and cans, it is easy to understand why milk swarms with bacteria; and, if we allow time also, the wonder is, not that it contains so many germs, but rather that it is still potable at all.

When we reflect upon the indescribably filthy condition of many cow stables; upon the fact that the cow's udders and flanks are not infrequently covered with flaking excrement; upon the quality of the men employed to do the milking, etc., etc., it becomes a simple matter to understand how this rich animal fluid—sterile at the start, but drawn by unclean hands into half-cleaned pails, and meantime sprinkled from above by the dust of the stable, by hairs, dandruff, dirt, and particles of excrement from the skin and udder of the cow, vigorously shaken by the milker or brushed by his hat—becomes infected with organisms. That these multiply swiftly and enormously in the warm and rich fluid, well aërated by the act of milking, is also a natural consequence of favorable conditions.

Of fifty-seven samples taken directly from the milk wagons and planted at once, the average number of bacteria were 2,355,500 per cubic centimeter. In sixteen samples taken from groceries, usually older milk than that found in the wagons, the average number of bacteria was 4,577,000 per cubic centimeter. Two samples collected from well to do families upon the Back Bay showed an average of 1,488,000 per cubic centimeter. Forty five samples of so-called "railroad" milk, that is produced at a distance from the city and shipped by rail, under favorable conditions even upon its arrival, contained an average of more than 500,000 bacteria per cubic centimeter.

Mr. S. C. Keith, of Boston, a graduate of the institute of technology, who has for two years devoted himself to the special study of milk products and their contamination, recently gave a most interesting lecture before the Boston Society of Arts upon this subject. He stated that he had made experimental bacteriologic studies during the last summer upon the milk from ninety-seven dairies, examined soon after its arrival in Boston. Twelve per cent. contained less than 100,000 bacteria per cubic centimeter; 51 per cent. from 100,000 to 1,000,000; 25 per cent. from 1,000,000 to 5,000,000; and 12 per cent. over 5,000,000.

Professor Sedgwick quotes the investigations of Professor Renk of Halle, who found that the public milk-supply of that city varied from 6,000,000 to 30,000,000 per cubic centimeter, and he remarks by way of comparison that the sewage of American cities seldom contains, on the average, more than 1,000,000 bacteria per cubic centimeter.

Professor Sedgwick has not been willing to treat the subject from simply the standpoint of abstract science, and at the October quarterly meeting of the Massachusetts Boards of Health in 1897, and published in the JOURNAL, will be found the following rules, suggested by a committee of which Dr. Sedgwick was chairman, for adoption by Boards of Health of the State for the protection of milk supplies from pollution:

ARTICLE I.

SECTION 1. All persons engaged in the production of milk for sale, or in the sale, delivery, or distribution of milk in the city or town of . . . shall annually, on or before May 1, make written application, on forms prescribed by the Board, for a permit or license.

SEC. 2. No person shall engage in the business of producing milk for sale, or in the sale and distribution of milk, in the city or town of . . . after April 30, 189-, without a permit or license to do so signed by said Board of Health, and under such conditions as said Board of Health may impose, revocable at the pleasure of said Board.

SEC. 3. The conditions under which every cow is kept, whose milk is brought into any city or town, or kept, delivered, distributed, sold, or offered for sale, in such city or town, shall be made known to the local Board of Health in such detail as the Board may require, and shall be approved thereby; and no milk except that delivered from such cows shall be brought, kept, delivered, distributed, sold, or offered for sale.

SEC. 4. No milk shall be sold, offered for sale, or distributed in any city or town, unless the cows from which it is delivered have within one year been examined by a competent authority, and shown to the satisfaction of the local board of health to be free from disease.

SEC. 5. All persons having a permit or license to sell, deliver, or distribute milk in any city or town, shall keep a copy of the same constantly posted in a conspicuous place on premises and vehicles from which milk is sold or distributed or in which milk is kept or delivered.

ARTICLE II.

SECTION 1. No milk shall be kept for sale or distribution, or handled, tranferred from can, or stored in any stable or similar place, or any room used in whole or part for domestic or sleeping purposes.

SEC. 2. Milk shall be stored or regularly mixed, cooled, or poured from can to can only in a room not directly connected with a stable or stables, provided with a tight floor and kept constantly neat and clean, the walls of the room being of such a nature as to allow easy and thorough cleaning. The room aforesaid shall contain proper appliances for washing and sterilizing all utensils actually employed in the storage, sale, and distribution of milk in said building, and all such apparatus and utensils shall be washed with boiling water or sterilized by steam regularly after being used.

SEC. 3. No animal, water-closet, or privy shall be in the aforesaid room or any room directly connected therewith.

SEC. 4. All milk directly after it is drawn from the cow shall be at once taken to, and be at once filtered, cooled, and stored in a room such as is described in Article II, Sections 1 and 2.

ARTICLE III.

SECTION 1. Milk kept for sale in any store, shop, market, bakery, or other establishment, shall be always kept in a covered cooler, box, or refrigerator, properly drained and

cared for; and while therein shall be tightly corked or closed, and only in such location and under such conditions as shall be approved by the local board of health.

ARTICLE IV.

SECTION 1. All cans, bottles, or vessels of any sort used in the sale, delivery or distribution of milk to the consumer must be cleaned and sterilized by the milk dealer before they are again used for the same purpose.

ARTICLE V.

SECTION 1. Every person engaged in the production, storage, transportation, sale, delivery, or distribution of milk, shall immediately on the occurrence of any case or cases of infectious disease, such as typhoid, scarlet fever, or diphtheria, either in himself or in his family, or among his employes or within the building or premises where milk is stored, produced, sold, or distributed, take care that the local board of health is notified of such case or cases, and at the same time suspend the sale or distribution of milk until authorized to resume the same by the local board of health.

SEC. 2. It shall be unlawful for any person suffering from a contagious or infectious disease, such as typhoid, scarlet fever, or diphtheria, to handle, transport, deliver, mix, taste, work over, or distribute milk, or in and about places where milk is stored, sold, or distributed, or to serve as a milker or milkman. No vessels which have been handled by persons suffering from such diseases shall be used to hold or convey milk.

A long discussion of these rules was entered into by the members of the Massachusetts Boards of Health, which resulted in their adoption, and as a fruitage thereof, I subjoin the following order issued by the Board of Health of the town of Montclair:

BOARD OF HEALTH.

AN ORDINANCE CONCERNING THE PRODUCTION OF MILK AND REGULATING ITS SALE AND EXPOSURE FOR SALE IN THE TOWN OF MONTCLAIR.

Be it ordained by the Board of Health of the Town of Monclair, in the County of Essex, as follows:

SECTION 1. Every person, corporation or association of persons who now is or who hereafter shall be engaged in the sale, or exposure for sale of milk within the Town of Montclair, before selling or exposing the same for sale, shall furnish the Board of Health of the Town of Montclair a true and complete statement as to the locality from which the milk so sold or exposed for sale is produced; also a full and complete list of the names and addresses of persons from whom the said milk was purchased, and the names and addresses of all persons to whom they are regularly selling or delivering milk within said town; said lists shall be furnished to the said Board on the first days of January, April, July and October of each calendar year, and at all other times when requested by the said Board.

SEC. 2. No milk shall be sold or exposed for sale in the Town of Montclair except milk from cows stabled under light, dry and well ventilated conditions, and in all other respects conforming to the requirements hereinafter set forth, viz:

a. Each cow shall have at least three feet in width of floor space when fastened in stanchions, and in all cases where no adequate artificial means for ventilation are provided, each animal shall have an air space of at least five hundred (500) cubic feet.

b. All stables for shelter of said cattle shall be provided with a tight, dry floor. The manure drop shall be water-tight, and if constructed of wood shall be asphalted, tarred or otherwise made non-absorbent.

c. The walls and ceilings of said stables shall be whitewashed whenever it may be deemed necessary by this Board of Health.

d. Manure shall not be allowed to accumulate in large quantities in stable yards, nor near the buildings where the cattle are kept, and when stored temporarily in such places it shall be removed at least once per month. The said stable yards shall be drained and kept in a clean, dry condition, and no accumulation of household garbage, vegetables or other putrescible matter shall be allowed to remain or decay in said stable yards.

e. Cattle shall at all times be kept in a clean condition, and udders shall be washed, hand rubbed or wiped with a clean, damp cloth before each milking.

f. No milk shall be sold or offered for sale or distributed in the Town of Montclair, unless the cows from which it is obtained have, within one year been examined by a competent veterinarian, and are free from diseases dangerous to the public health. But this shall not be construed as forbidding the sale or use of milk from cows not tested with tuberculin.

g. No milk shall be sold or offered for sale or distributed in the Town of Montclair, obtained from any cow that has calved within ten days, or from a cow which will come in or calve within sixty days.

SEC. 3. No milk shall be sold or exposed for sale in the Town of Montclair, except milk produced from cattle fed and watered under the following conditions: All food given to such cattle shall be fresh, sweet and wholesome. The use of either distillery slops or fermented brewer's grains is prohibited, and their presence on any dairy premises will be considered sufficient cause for the exclusion of the milk from such dairy from sale or delivery in said town. Water supplied to cattle shall be pure and free from all contamination by stable or household drainage, and no well or spring in or adjoining any stable yard shall be used for watering said cattle.

SEC. 4. All milkers and other attendants employed in any dairy, the milk from which is to be sold or offered for sale or delivered in said town, shall be personally clean. Before entering upon their duties connected with the dairy, hands shall be washed, and clothes changed or brushed, and no milk shall be delivered or sold or exposed for sale in said town, produced from dairies wherein the foregoing regulations are not enforced.

SEC. 5. Utensils used for the collection and transportation of milk shall, before being used, be thoroughly washed with pure water and soda or soap, and then sterilized by boiling or steaming.

SEC. 6. Milk which is to be delivered or sold or offered for sale in said town shall, immediately upon being drawn from the cow be removed from the stable to a room separate and apart from the said stable, and immediately cooled by submerging the vessel in which the milk is contained in cool water to a depth equal to that of the said milk in the vessel. The above mentioned room shall be properly ventilated and lighted and shall be used for no other purpose than that indicated above, and shall at all times be kept in a clean condition.

SEC. 7. The said milk shall be delivered in bottles unless permission for delivery in another manner shall be granted by said Board. No tickets shall be used in connection with delivery of milk.

SEC. 8. If at any time any person or persons having any connection with a dairy from which milk is delivered or sold or offered for sale in the Town of Montclair, or any resident member of the family of any person so situated, shall be stricken with cholera, smallpox, (including varioloid), diphtheria, membranous croup, yellow, typhus, typhoid or scarlet fever, measles or any other communicable disease that may hereafter be declared by this Board to be dangerous to the public health, notice shall be given to said Board immediately, by th eowner or owners of such dairy, and no milk produced from the dairy of any corporation, person or association of persons failing to give the notice herein required, shall hereafter be sold or exposed for sale or delivered in the Town of Montclair, until special permission therefor has been granted by said Board.

SEC. 9. Any person, corporation, or association of persons, violating any of the provisions of this ordinance, shall, on conviction thereof, be liable to a penalty of not less than ten nor more than one hundred dollars.

SEC 10. All ordinances or parts of ordinances inconsistent with the provisions of this ordinance are hereby repealed.

Passed March 25, 1898.

D. D. DUNCAN,
President.

Attest:
R. P. FRANCIS, Secretary.

My friend, Dr. J. Cheston Morris of Philadelphia, one of the best known authorities upon the subject of milk-supply and distribution, writes me under recent date and in reply to the question, Where can milk be most satisfactorily produced? "On a farm where the animals can browse contentedly on green grass, near running waters, and can find good shelter, plenty of hay, corn fodder, corn and cob meal in winter, warm, well-lighted and aired stables. Keep animals clean, dry, well-fed and freely exercised. Stimulate them unnaturally and disease may follow. Breed only from healthy animals and avoid unhealthy care-takers. My Devon cows are giving me about five and a half times their weight in milk per annum, which furnishes four quarts of cream or four pounds of butter from twenty-eight quarts of milk. I think a machine that keeps itself in order and produces a new machine

annually, beside five and half times its own weight, without undue urging, a pretty good machine, and I am satisfied. I do not believe we can preserve milk as it comes from the cow and with digestibility undiminished for more than thirty-six to forty-eight hours."

Dr. Morris refers to a very recent discussion having taken place in Philadelphia over the best methods of handling and distributing milk, resulting in the approval by the Board of Health of the glass jar distribution, well known to have been originally introduced by Dr. Morris. The advocates of the large-can process of distribution objected to the glass-can system on the ground that contagious disease might be carried from house to house by imperfectly disinfected jars, but Dr. Morris states, "I showed that I had carried on this method of distribution for more than twenty years without a single case of such carriage, either among customers or at the farm; that for the farmer's own protection, as well as for his profit, absolute practical disinfection for each jar is indispensable."

It is apparent that a rigid supervision under State authority would do much toward the protection of the public, by furnishing milk produced by healthy cattle, kept reasonably clean, sent to market much cleaner and better preserved; in a word, safer for public consumption.

As shown by Professor Sedgwick, to a degree at least, it is necessarily an infected article and consequently must undergo decomposition within a limited period, that placed by such a distinguished authority as Dr. Morris not exceeding forty-eight hours.

Dr. Morris' method of requiring each producer to put up his milk in pints and quarts in glass jars, with the name of the dairy and the date of milking has manifest advantages. Any defect in the supply or cause of disease, as, in illustration, the repeated occurrence of typhoid fever (epidemics disseminated by the milk-supply) can be easily traced. It also stimulates rivalry and fosters a local pride among the farmers. It is noteworthy to observe the much better keeping quality of milk thus prepared for the market.

Illustrative specimens were shown by Dr. Morris, when lecturing upon the subject some time ago in Boston, that were perfectly fresh and sweet when the jars were opened four days after the milking, although subjected to the long journey from Philadelphia.

On a model farm near Boston the process of milk preservation is carried on in the following simple and effective manner: Having been milked as cleanly as possible, the milk is poured into a receptacle and by gravity finds its way through a series of strainers into an adjoining apartment having no other connection with the stable. Here it is quickly refrigerated and put up for market.

To aid in a cleaner process of milking, a pail has been devised called the "climax milkpail." It consists of an ordinary pail with a tightly fitting cover with two openings from which funnels project considerably above the surface of the cover. The bottom of these funnels is covered with close-meshed wire strainers. By its use much of the dirt which ordinarily falls into the pail from the udder is avoided. Pure rubber covers of a size to enclose the entire teat ending in a rubber tube, to conduct the milk into a closely covered pail could be used without much difficulty after a little practice with them on the part of the milker. They would be of the highest service, cheap, easily cleaned, and with reasonable care, furnish an almost absolutely sterile milk.

Mr. Horlick of Racine, Wis., quite recently described to me a most ingenious device for milking cows by a machine, the power of which is furnished by an electric motor. It is said in many ways to work satisfactorily, and by an ingenious combination may be applied to the milking of even fifty cows at the same time. All these methods are advancements in the right direction, to which may be added what, in a limited degree, has already been carried into effect—the process of sterilization by the application of a low grade of heat, Pasteurization, that is, maintaining the milk for a considerable period at a temperature of about 170 degrees F., not high enough to be detrimental to the albuminoids. Even if sterilization by this method is effected, contamination is sure to follow upon subsequent exposure to bacterial infection.

The secretion of the mammary gland is the product of certain epithelial cells. By their transforming power they manufacture from the blood a mixture of fat, sugar, and salts in a watery solution which we call milk. It is in fact strictly an animal food of unstable composition and is easily decomposed under the action of bacterial development. A pound of very lean beef and a quart of milk each contain about the same quantity of actual nutritious material. The taste which is objectionable in sterilized milk may be modified by pouring the milk from one receptacle to another, thus aërating it. In certain parts of the country Pasteurized cream has become popular. It is more conveniently handled and, freed in large measure from bacteria by the process, will keep for days without souring. It is objected to because of its lack of consistency, being thinner and less viscous. The Wisconsin Agricultural Experiment Station, after a careful study of the subject, recommends the use of lime dissolved in a solution of granulated sugar. This is called "viscogen," on account of its viscous producing properties, and the treated products are called visco-cream, visco-milk, etc. Only one part of viscogen to one hundred and fifty parts of cream is required, and the small quantity of lime added according to this rule only amounts to about four parts in 10,000, which, instead of being detrimental to the health, is rather beneficial.

In several European cities sand filtration of milk is employed at a central depot after its arrival from the country. The filters consist of large cylindrical vessels, divided by horizontal, superposed compartments, of which the middle three are filled with fine, clean sand, sifted into three sizes, the coarsest being placed in the lowest and the finest in the topmost of the three compartments. The milk enters the lowest compartment through a pipe under gravitation pressure and, after having traversed the layers of sand from below upward, is carried by an overflow to a cooler fed with ice water, whence it passes into a cistern, from which it is directly drawn into locked cans for distribution. Milk thus treated is not only free from dirt, but the number of bacteria is reduced to about one-third. In new milk the loss of fat is said to be very slight, but the quantity of mucus and slimy matter retained in the sand is surprising. The sand is renewed each time the filter is used.

The live stock interests of our country are so enormous that it is difficult to form a just appreciation of their value. According to the census of 1890, there were that year in the United States between fifty-one

and fifty-two millions of cattle, calves born over sixteen and one-half millions, and the total number of milch cows were 16,511,950, of an estimated value of over $4,000,000,000. The milk-supply for 1889 reached the enormous aggregate of 45,210,125,567 gallons, worth on the farm over $651,000,000.

The census of 1890 gives us the latest reliable data, but there has been a material increase in the value of the milk-supply in excess of the ratio of the increase of population. It is only by comparison that such enormous amounts can be appreciated. The total value of all the mineral and metal products, including coal, of 1896 are given as follows:

Belgium	$100,000,000
France	110,000,000
Germany	300,000,000
United Kingdom	340,000,000
United States	737,958,761

Some years since Mr. Edward Atkinson of Boston showed that the *hen* was a greater producer of material wealth than the gold mines of the country. From the above figures we note that the *cow*, by her milk product alone, is a source of wealth not far below that of all the mineral products of the United States.

The butter product for 1889 was 1,024,223,468 pounds and the cheese product for the same year was 18,726,818 pounds. The average quantity of milk produced for milch cows during the year 1889 was $315\frac{54}{100}$ gallons, and to each individual in the United States for the year was $83\frac{1}{3}$ gallons, or nearly one quart per day for every man, woman and child in the entire country. Estimating that six-tenths of the product was canned and shipped for distribution, the amount thus disposed of was 25,008,602,718; analytically 87 per cent. is water, and at least 75 per cent. of the water should be removed before shipment. The amount of *water* thus expensively distributed with only attendant loss, is so enormous that it can be appreciated only by means of comparison—18,756,452,037 pounds equal 9,378,226 tons =468,911 car loads each of 20 tons =11,725 train loads, each of forty cars =2931 miles of continuous trains, reaching nearly from the Atlantic to the Pacific Oceans if thus placed to span the continent!

Were it possible to eliminate this enormous percentage of waste without damage to the resultant product, the gain would be almost beyond comprehension.

G. W. Goddard of Cambridge gives the following figures from New York City Board of Health Report: 1896, pp. 90, 91. Daily average of cows' milk and condensed milk shipped to New York City: Milk 828,612 quarts, cream 16,000 quarts, condensed milk 8600, a total of 853,212 quarts. To give milk equivalent to the cream add 64,000 quarts. To give milk equivalent to the condensed add 19,800 quarts, making a total of milk-supply 937,212 quarts, condensed 75 per cent. of the whole; 87.7 per cent. of above is produced in New York State; in New York City 2200, in State 1,112,370, in all 1,114,570 cows. Total cost at five cents per quart, over $60,000,000 per year.

The Agricultural Department at Washington has just issued one of its bulletins, treating of the milk-supply of Boston and other New England cities, and prepared by Mr. George M. Whitaker, executive officer of the Massachusetts State Dairy Bureau. The Greater Boston, namely, within a radius of ten miles from the State house, contains a population of one million, or eighteen per cent. of the population of New England.

About three-fourths of the supply of milk for this section is sent by railroads, the greatest distance for direct shipment is 140 miles. For the most part the milk is conveyed in cans especially constructed for this purpose with refrigerator closets, etc. The milk thus supplied is from eighteen to thirty hours old before it reaches the consumer. Boston was the pioneer city in this country in the transportation of milk by railroad. The first man to engage in this business was Jason Chamberlain, who began operations sixty years ago upon the Boston & Worcester railroad. He sold milk at twenty-five cents per can of nine and a half quarts. In 1843 there was printed in the *New England Farmer* an article upon the subject. It states, "We have learned that one man brings in upon the Worcester railroad 200,000 gallons annually. This is supposed to be one-tenth of all that is sold in the city. This at twenty cents a gallon costs the citizens $400,000 per year." Today fully three-quarters of the milk supplied to Greater Boston passes through the hands of large wholesalers, locally known as contractors. There is a considerable increase in the consumption of milk in Boston each year. The total for 1895 was about 18,000,000 gallons—in 1897 the supply had increased nearly 700,000 gallons. Within the ten-mile radius there are over 7000 cows.

Mr. B. F. McIntyre, of McKesson & Robbins, New York, has recently published some interesting articles upon the condensing of milk by a process of refrigeration when the milk is in agitation. His more recent publication is found in the *Milk Reporter*, January, 1897. His experimental studies were carried on at Cattaraugus, N. Y., under favorable refrigerating conitions. The product met the approval of dealers from both the commercial and economic standpoint. His process is briefly summarized as follows:

1. Reducing the bulk of the milk by conversions of the water of the milk into ice, instead of vapor or steam.

2. The making of the ice on the surface only of the milk, by elevation of the freezing pans in an atmosphere of zero temperature or thereabouts.

3. Frequent breaking of the surface ice so that fresh liquid is presented to a freezing effect, with gradual submersion of the broken ice as the bulk of ice increases.

4. Standardization of the product.

Considerable difficulty was experienced in the selection of milk free from "cow-odor." Milk with a perceptible taint of animal odor is unfit for condensation by cold processes as thereby these odors are intensified. The fats are removed by a cream separator which should be set to run heavy cream and which should assay not less than fifty per cent. milk fat. Running into the separator is of much value in freeing the milk from dirt and foreign animal products. From the separator the fat-free milk was run over a bank of horizontal copper pipes through which ice water was circulated reducing the temperature of the milk from 80 to 35 per cent. F. By this process of condensing there is no thickening of or chemic change in the albuminoids, such as takes place when the milk is reduced by heat in vacuo. A condensation of five and one-half gallons to one gallon is required to produce a product with the desired consistency. By this freezing process one hundred gallons of skim-milk are reduced to thirteen gallons of very thick milk which represent in milk, sugar, caseine and inorganic salts fully nine gallons of solids.

Eighty-seven gallons of water in the milk are formed into ice. An average sample of the snow-like ice, when melted and evaporated to dryness contained .2 per cent. of residue. A final step in the process was the admixture of the heavy cream in proper proportions with the concentrated fat-free milk. In keeping properties the new form of condensed milk is superior to whole milk, as the freezing temperature at which the milk is held is destructive of some forms of germ life common to milk, and the natural life of the preparation is prolonged by this partial sterilization."

I am in receipt of letters from Mr. McIntyre, of recent date, in which he states, that "unfortunately the plant at Cattaraugus has recently been burned," and in reply to my inquiry as to the expense attendant upon this process of condensation, he states: "The cost of the manufacture of ice *per se* from milk is not so very much greater than making it from water. My process could be designated as a method to produce ice in crystal form, instead of in solid or cake form, and the solids of the milk might be considered as a foreign admixture to the water being subjected to the freezing effect. I claim, and have the judgment of experts, that my process will produce as much ice daily from a given weight of coal, as will be produced in the ordinary ice-making process. Ice made from distilled water is sold in New York in midsummer at $2.00 per ton."

If the condensation can be carried on by a process by which the water of the milk can be extracted at any such cost as above estimated, it will at once be accepted as of the largest value. It seems feasible and merits a careful consideration, as introducing a possible new factor of the greatest value in furnishing economically a daily product of such an indispensable character as milk.

The condensation of fluids in vacuo has been economically conducted, at a very recent period, at a much lower rate of temperature than was formerly deemed possible. I am advised by two New York chemists that one of our large manufacturers of malt products is successfully carrying out a process with the temperature as low as 110 degrees F., in vacuo and it is believed not improbable that milk can be evaporated to dryness at a temperature of 100 degrees F. This temperature would scarcely affect in any way the albuminoids and would leave a product unchanged except for the abstraction of the water.

It seems thoroughly feasible to treat milk in large quantities by abstracting the great bulk of the water through refrigeration, thus practically sterilizing the resultant product. This product, treated by evaporation, either in vacuo at a low temperature or by a warm air blast, the heat-point of which is regulated so that the resultant product may be in the form of granules, cakes, or of a consistency not unlike that of butter or cheese, all possessing good keeping quality, would, upon the addition to it of the proper percentage of water, furnish fresh milk at will.

In these days of rapid progress the public is accustomed to accept radical changes, when demonstrated for the better, with very little of comment. The immense problem which I have thus all too briefly outlined, viz., furnishing vastly more economically a safe and satisfactory milk-supply is worthy the attention of all sanitary scientists. Clearly formulate the *want* and show the manifold advantages resulting from *better methods*, and science at once steps in and demonstrates the *way* for their attainment. This, I believe, will early be accomplished. The milk-supply of the world will be economically revolutionized, to the manifest advantage of every individual.

A further study of Mr. McIntire's processes increased my interest in the subject until, after a correspondence of some length, I induced my friend, Mr. George M. Goddard of Cambridge, a well known expert in the processes of refrigeration, to visit New York and carefully examine the method advocated by Mr. McIntire. The outcome of this, through Professor Sedgwick, has been to secure the active co-operation of Mr. Edward Burnett, who has devoted a large share of his life to the scientific studies relating to agriculture, and especially the better methods of milk production and distribution. Mr. Burnett's large milk-plant at Southboro was placed at Mr. Goddard's disposal and the summer occupied in a careful practical study of the processes. Samples of the concentrate were distributed for experimental use. Those which came under my observation proved in every way satisfactory. The oldest specimen examined, having been kept thirteen days, was perfectly sweet when opened. A careful series of bacteriologic tests, by the request of Professor Sedgwick, were undertaken by Prof. G. M. Holman, of which the following tables furnish brief samples:

TABLE I.—First Series (Aug. 1, 1898.)

Sample.	Bacteria per c.c.	
1 Whole milk	267,400	Numerous liquefiers.
2 Skim milk (pan)	432,600	
3 First condensation	394,200	Odorless plate.
4 Second condensation	175,000	Mouldy cheese odor.
5 Third condensation	24,000	Sweet butter odor; 1100 liquefiers.
6 Fourth condensation	19,400	Sour milk odor; few liquefiers.
7 Past'rized cream prod.	175,000	Mouldy odor.
8 Raw cream product	2,616,100	Many moulds.
9 Raw cream product	2,759,400	
10 Pasteurized cream	0	Plate covered with moulds (mucus).
11 First ice	6,370	Some moulds.
12 Second ice	3,444	Some moulds; badly liquefied.
13 Third ice	1,470	Many moulds; badly liquefied.
14 Fourth ice	17,000	
15 Ice from 19 hours' freeze (July 20-21).	6,035	

TABLE II.—Second Series.

Sample.	Bacteria per c.c.	
1. Skim milk	152,400	
2. First condensation	10,200	
3. Second condensation	7,700	
4. Third condensation	6,100	
5. Fourth condensation	2,000	
6. First ice	300	
7. Second ice	185	
8. Third ice	5,320	
9. Fourth ice	7,300	
10. Raw cream product	612,360	
11. Pasteurized cream product	9,200	
12. Pasteurized cream	11,300	
13. Raw cream	14,742,000	Badly liquefied; bad smelling plate.
14. Borden's evaporated cream	0	
15. Boston condensed (unsweetened)	1,134,000	

TABLE III.—First Series.

Sample.	Solids, per cent.	Ash, per cent.	Fats, per cent.
Whole milk	13.29	0.87	4.5
Skim milk	9.32	0.7	. . .
Raw cream product	34.73	1.61	15.50
Fourth condensation	17.45	2.02	. . .
Nineteen hours' ice (20-21)	0.49	0.05	. . .
Third ice	1.38	0.07	. . .
Second Series.			
Raw cream product	44.1	. . .	19.7
First condensation	15.0	. . .	. . .
Second condensation	23.39	. . .	. . .
Third condensation	35.49	. . .	. . .
Fourth condensation	36.18	. . .	. . .
First ice	1.15	. . .	. . .
Second ice	2.47	. . .	. . .
Third ice	5.96	. . .	. . .
Fourth ice	21.97	. . .	. . .
Borden's condensed	30.2	. . .	3.7
Boston condensed	38.5	. . .	0.3

No pathogenic germs in "Refrigerated Condensed."

Test from run of Sept. 3, 1898.

Samples.	Bacteria per c.c.	Solids, per cent.
1. Whole milk	90,000	13.43
2. Skim milk	78,500	9.34
3. Raw cream product	17,400	39.88
4. First condensed	17,900	14.28
5. Second condensed	6,800	22.73
6. Third condensed	8,300	24.6
7. First ice	1,982	0.37
8. Second ice	5,700	4.25
9. Third ice	11,250	8.04
10. Third ice, after three extractions	5,100	18.85
11. Raw cream	14,000,000	.....
12. Pasteurized cream	37,000	.....
13. Pasteurized cream product	5,600	.....

Reduction of bacteria from the whole milk to the finished (Pasteurized cream) product, 94.2 per cent.

It will be noted that the bacteria are very greatly diminished by the refrigerating process, although the product is not absolutely sterile. A special plant is now being established, where it is believed that much better work may be accomplished with a great reduction of cost. The daily output will be at the beginning 600 gallons reduced to 100 gallons, the product having already been disposed of. It is confidently believed that the result will assure an abundant reason why the milk distribution may be greatly improved, giving a far more reliable product, of good keeping quality, at a much less cost to the consumer. If, for commercial reasons, it does not prove profitable to carry the process of concentration above the result outlined, the ordinary family supply of milk may be furnished weekly instead of daily and a far better product obtained than that of the present.

I have in my possession a specimen of powdered milk made by Mr. McIntire nearly two years ago, in a state of good preservation; thus demonstrating that the so-called butter fat of milk can be preserved in mixture. Mr. McIntire is of the opinion that it is easy to concentrate the solids of milk to a consistency not unlike butter or soft cheese, which will require only the addition of a proper amount of water to restore it to a sweet, wholesome, fresh milk, containing its proper quantity of normal cream. The keeping quality of this product will be such that it will come into world-wide distribution.

IMPORTANCE OF REGULATING DIETETICS

IN HARMONY WITH THE PHYSIOLOGIC LAWS CONTROLLING DIGESTION, NUTRITION AND WASTE, AND SOME OF THE INCONSISTENCIES IN PREVALENT DIETETIC PRACTICES.

Presented to the Section on Physiology and Dietetics, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10 1898.

BY N. S. DAVIS, M.D.

CHICAGO, ILL.

That the quantity and quality of food for man, and the times for taking it, should be regulated in harmony with the physiologic laws governing the processes of digestion, assimilation, nutrition, disintegration and excretion, is too obvious to the intelligent physician to require argument or illustration.

The fact that all living animal structures are constantly undergoing disintegration atom by atom or cell by cell, renders it necessary that there should be constantly present in the fluids permeating the structures, new atoms or cells or vitalized materials, ready to take the place of materials lost, and thereby maintain the integrity of the tissues.

During childhood or youth, or period of growth, the amount of food assimilated must exceed the amount lost by disintegration or there would be no progressive development of the various parts of the body. But in adult life the amount of true food or ingests each day should equal as near as possible the amount of loss by the processes of waste. It is not practicable, however, to establish the actual amount of food required daily by any individual in health, by simply determining the average amount of waste he suffers, unless such determinations include the variations produced by different degrees of physical exercise and mental activity. For it is well known that the activity of both nutrition and waste are much influenced by the amount of physical exercise accomplished in a given time, while it is equally true that mental cheerfulness, confidence and activity increase all the physical functions, and that grief, despondency and fear diminish the same. Another factor of great importance, though often omitted when considering the subject of dietetics, is the quantity of oxygen received through the lungs into the blood in a given time, and the conditions of the atmosphere from which it is derived. In the popular mind, diet or food is considered only in reference to the materials received into the stomach in a solid or liquid state, while no thought is given to the quantity or quality of the atmospheric air supplied to the air-cells of the lungs, from which oxygen is being constantly taken up by the blood-currents and distributed to every living structure in the body. When we consider, however, that the oxygen thus derived is nature's excitor of all nerve sensibility and muscular contraction, as well as the active oxidizer of all waste products, we are compelled to recognize it as an essential factor in all the processes of assimilation, tissue metabolism, and excretion. And it becomes as necessary for each individual to secure a sufficient amount of pure air for the lungs, as it is an adequate supply of pure food for the stomach, for universal experience has shown that without a constant supply of the former, the digestive and assimilative organs soon cease to make a healthy and efficient use of the latter. But as nature supplies the air in unlimited quantity at all times without man's labor, his chief ingenuity has been exercised in devising ways and means for either impairing its quality or limiting the quantity to be inhaled, thereby limiting the quantity of its oxygen supplied to the blood. This is seen, not only in the serious interferences with respiratory movements by erroneous habits of dress for the day and the occupancy of small or ill-ventilated rooms for the night, but also in the construction of over-crowded, ill-ventilated and uncleanly houses and workshops, of every kind, for working men and women, by which they are compelled to use both an impure and an inadequate supply of air alike in the shops and the homes.

Nor is this all, for one of the most injurious effects of the enormous quantity of alcoholic drinks and tobacco used in this and other countries, is their influence in lessening the efficiency of respiratory movements and the capacity of the blood to receive and distribute oxygen to the tissues of the body. Experimental therapeutists have fully established the fact that alcohol, by its anesthetic or paralyzing influence on the respiratory nerve center, diminishes the depth of the respiratory movements, thereby lessening the amount of air used, in direct proportion to the quantity taken, and at the same time by its action on the hemoglobin and corpuscular elements of the blood, it lessens the capacity of that fluid to receive oxygen

from the pulmonary air-cells and to carry it to the various tissues of the body. It is by this duplicate interference with the reception and internal distribution of oxygen, that alcohol retards tissue metabolism, encourages the retention of effete products, and lessens the vital resistance to all toxic agents, including pathogenic bacteria, as was so strikingly demonstrated by the recent experiments of Professor A. C. Abbott.

The effects of the use of tobacco on the important functions of the human body have not been demonstrated by as much scientific investigation as those of alcohol, but enough has been done to prove that enough of the active constituent called *nicotine* is imbibed either by smoking, chewing or snuffing to lessen the sensibility of the nervous and muscular structures and to impair the steadiness and efficiency of both the cardiac and respiratory functions. In doing this it necessarily lessens the oxygenation and decarbonization of the blood, and thereby impairs all vital processes in proportion to the quantity used. This has been shown most strikingly by comparing the progress, both physical and mental, of student smokers, in the same classes and subject to the same regulations in other respects, in the schools of France and in some of the colleges in the New England States. These comparisons have uniformly shown that the students who use tobacco, chiefly by smoking, averaged less physical growth and less progress in mental attainments than those who did not use it—the records extending through school periods of three and six years.[1] This effect of tobacco in retarding the physical development and mental progress during childhood and youth has been so fully demonstrated that all investigators agree that its use should be wholly avoided until the commencement of adult age. But if its narcotizing effects upon the cerebrospinal nerve structures and the organized elements of the blood are sufficient to retard both mental and physical growth and activity before the age of twenty years, will not the same narcotizing influence just as certainly lessen the activity of the same structures at any time after the age of twenty years, and thereby lessen the vital resistance to morbific agencies and shorten life?

The use of tobacco not only lessens the efficiency of respiratory movements and the internal distribution of oxygen, but it exerts a special deleterious influence on the heart, often disturbing the uniformity of its rhythm and impairing its force, and not unfrequently causing sudden death by cardiac paralysis.[2] From the foregoing statements it is evident that a just consideration of dietetics must include all ingesta habitually used, whether solid, liquid or gaseous; through the respiratory as well as through the digestive organs. And such ingesta must not only contain a sufficient quantity and variety of materials to equal the amount of waste from day to day, but they must also be free from such elements as are capable of impairing one or more of the important processes concerned in assimilation, nutrition and secretion.

The ingestion of oxygen and the elimination of carbon dioxid through the lungs is a continuous process, though varying in rapidity during different parts of the day in harmony with the greater or less activity of other functions. Thus oxygen is received and carbon dioxid eliminated more rapidly during active muscular exercise than during repose. The same increase takes place during the first two hours after the ingestion of ordinary food into a healthy stomach, and becomes the slowest in the early morning when the stomach and duodenum are most free from food. These variations are accompanied by corresponding changes in the temperature of the body and in tissue metabolism, and being strictly physiologic, they have an important bearing on the proper regulation of diet for the stomach. In all the higher orders of animals the digestive organs and the mental part of the brain are designed for regular diurnal periods of activity and rest. And it is still more true in regard to these organs in men, whose greater mental development and more varied occupations render continuous feeding impracticable. If the stomach, in its capacity and the laws governing its action, render it necessary to take food at stated intervals, it is evident that such intervals should be sufficient to complete the digestion and leave a period of gastric repose before the next meal. As a judicious meal of wholesome foods requires for its complete digestion from three to four hours, and if we add from two to three hours for gastric repose, it would indicate the desirability of not eating in health more frequently than once in six hours during the day, and double that time for the night, when the mind is supposed to rest in sleep. The very general custom of taking three meals per day is, therefore, in harmony with the physiologic laws governing the functions of the body. The amount and variety taken at each meal should be sufficient to supply all the elements necessary for growth and repair, and in such form as to be readily acted upon by the salivary, gastric and pancreatic secretions, and assimilated or vitalized by contact with the oxygen and corpuscular elements of the blood, and thereby fitted to become a part of living organized structures. The rapid progress of organic chemistry during the middle part of the present century, by which both the ultimate and proximate elements entering into the composition of the various structures, organs and secretions of the human body were made known, as well as the composition of all important food products, led physiologists to adopt an almost exclusive chemic theory of digestion, assimilation and nutrition. Finding the salivary, gastric, pancreatic and hepatic secretions each containing active constituents capable of combining with, or modifying some of the proximate elements of the food taken, the chemico-physiologists soon began to manufacture in their laboratories substitutes for, or aids to, the natural secretions, and have continued until the drugstores are filled with an almost endless variety of pepsines, peptones, enzymes, etc., each one of which is guaranteed to digest, or more properly dissolve, a given quantity of fibrin, albumin or protein in a test-tube kept at a proper temperature. Not satisfied with thus furnishing us with artificial aids to our natural digestive fluids, they have undertaken to condense, modify or pre-digest our food products before we eat them, to such an extent that we are at every turn urged to go for food to the apothecary shop, laboratory or the "liquid beef" manufactory, instead of the grocery, the meat-market and the farm. And yet it is probable that disorders of digestion and assimilation were never more prevalent than at the present time, when every such disorder is sought to be corrected by some new food preparation or artifi-

[1] Effects of Nicotine, by J. W. Scaver, A.M., M.D., Quarterly Journal Inebriety, April, 1897, p. 132.

[2] Lectures on the Action of Medicines, Lauder Brunton. Pp. 321-323, 1897.

cial food digestor, instead of seeking out the causes of the disorder and endeavoring to remove the same. The natural digestive fluids are the products of vital activity in living structures. The salivary glands, the gastric tubules, the pancreatic and hepatic cells and the structures in which they are imbedded, are all endowed with vital properties, and the digestive and assimilative processes are *vitalizing* and not merely chemic changes. The chemist may mix any one or all the elements of food with either artificial or natural digestive fluids in glass tubes or earthen vessels and he may effect their solution, but he would never produce either true chyle, lymph or blood, much less an organized structure. As well might he put an unimpregnated ovum into his incubator, and expect in due time to have a live chicken instead of a decayed and odorous mass within the shell. While it is important that the quantity and quality of our food, and the times for taking it, should be duly proportioned to the amount and kind of retrograde metabolism or loss, it is equally important that we avoid those influences that habitually interfere with the due oxygenation and decarbonization of the blood or depress the functions of the pneumogastric and vasomotor nerves.

The occupancy of overcrowded or ill-ventilated rooms either for sleep or work; the neglect of sufficient open-air exercise during some part of the day; the eating in haste and the indulgence in intense mental activity, anxiety or violent emotions directly after meals or until late hours of the night; and the ordinary use of alcohol and tobacco, are the chief causes of those digestive disorders that have given us the credit of being a nation of "dyspeptics." And an analysis of their mode of action will show that all of them, either directly or indirectly, lessen the efficiency of the respiratory function and the internal distribution of oxygen. That close and persistent mental application in-doors lessens the depth of the respiratory act and consequently lessens the quantity of air used in the lungs and of oxygen imparted to the blood, has long been known.

And mental anxiety and depressing emotions much increase this effect, and sometimes suspend the secretion of gastric juice entirely while the stomach is full of food, while the effect of both alcohol and tobacco have been explained already. If it is an established fact, as previously stated, that oxygen is taken up from the air-cells by the blood-currents much more rapidly during active digestion of food, then certainly all the causes enumerated above should be avoided to the greatest possible extent during the taking of food and for one or two hours thereafter.

Our food should be taken with mental cheerfulness, without haste, and in an atmosphere of fresh, pure air; and for the next hour, at least, only moderate mental or physical labor should be engaged in and all obstructions to full respiratory movements avoided. The general observance of this simple dietetic rule would add immensely to the sum of human happiness, and materially prolong the average duration of human life.

A Valued Friend.—She: Dr. Reaper tells me that he is not only your family physician, but a warm friend of yours. He: Oh, yes indeed, and I can recommend him very highly. She: Has he ever treated you? He: No, not personally. But he was very successful with a wealthy aunt of mine.—*Hartshorn's Roller.*

FUNCTIONAL NERVOUS DISTURBANCES IN PULMONARY INVALIDS.

Presented to the Section on Neurology and Medical Jurisprudence, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

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During a six years' experience with pulmonary tuberculosis in Colorado, with opportunities for continued observation of cases, I have been enabled to note the very frequent association with this disease of the various forms of functional nervous disturbance. The conviction has arisen that there exists a relation more intimate than is perhaps generally recognized between these conditions, which may be justly considered the two most prevalent of American disorders.

A brief review of my clinical observations suggests itself as a means of directing more attention to this relationship, in the hope that ultimately further researches may afford a clearer conception of the subject. Without attempting to introduce any physiologic considerations, I will simply present the result of my own experience with reference to etiologic relations, prognosis, climatic influences and management. It is with much hesitation that I submit this report, realizing only too well the opportunities for error in the compilation of statistical records and the frequently resulting fallacies as to conclusions. I may state that while rather definite impressions as to certain phases of the subject have necessarily been received from daily general experience prior to the present inquiry, the study is here pursued without reference to any preconceived conclusions, with a view to securing more accurate information upon which to base opinions until then held in reserve. I am appreciative of the fact that the value of work of this nature depends entirely upon the authenticity of the records, the degree of intelligent discrimination possessed by the observer, and the most rigid and conscientious attention to detail.

Unfortunately, in a considerable number of the cases my records are incomplete from the standpoint of the neurologist. Some of the histories were imperfectly taken in this respect, and I am unable, therefore, to obtain complete data as regards family history and other etiologic considerations. It is hoped however, that the essential data are sufficiently complete to warrant approximate conclusions. I have preserved a record of 350 selected cases of pulmonary tuberculosis seen in private practice during recent years to Jan. 1, 1898. These cases have been subjected to continuous observation and have been carefully recorded. The list does not embrace those with very extensive infection, and hence with admittedly unfavorable prognosis. Neither are there many included with incipient trouble. The cases, on the whole, may be said to represent fairly the average class of pulmonary invalids in Colorado, exhibiting as a rule upon arrival moderately extensive and rather active infection. I make no effort at this time to classify the cases or report results with sole reference to the tubercular involvement, as this has been done to some extent in a previous paper.[1] It is my object to analyze them simply with respect to the relation between the nervous manifestations and the tuberculous condition. Of the 350 cases, 220, irrespective of any ner-

[1] Boston Medical and Surgical Journal, Sept. 16, 1897.

vous complications, are found to have shown improvement in Colorado. By improvement, without any further explanation, I allude to the varying degrees secured of partial arrestment. About two-thirds of the cases, taken as they come, have done well through a fairly extended period of observation, not including those who improved temporarily and later failed through intercurrent disease, accident or individual indiscretions.

I have divided the entire list into five classes with distinct reference to the nervous condition:

Class 1 numbers 164, or nearly half of all the cases, and represents those who may be considered to be free from any nervous manifestation whatever. Of these, 111, or nearly 68 per cent., have shown pulmonary improvement in Colorado.

Class 2 numbers 98, or nearly one-fifth of the entire list, and comprises those possessing distinctly nervous temperaments, but not presenting definite neuroses. Sixty-four of these have done well. Percentage of improvement, 65.

Class 3 contains 39, or rather more than one-tenth of the whole, and embraces those exhibiting slight neuroses. Twenty-four, or 61 per cent., have improved. Nearly all of this class were subjects of mild neurasthenia.

Class 4 has 33, or less than one-tenth of the whole, and includes those presenting *well-marked* neurotic disturbances. Thirteen, or 39 per cent., have improved. These cases manifested the severer forms of neurasthenia, chiefly of the depressed type, and moderate degrees of hysteria.

Class 5, numbering 16, comprises those individuals with pronounced neuroses, not included in Classes 3 or 4, but in whom the pulmonary involvement was very slight or insignificant. Eight, or 50 per cent., have improved with reference to the tuberculosis. All of this class were markedly hysteric.

In commenting upon these results it is interesting to note that the percentage of improvement in those with distinct nervous temperaments without neuroses, is nearly equal to that obtained in those devoid of all nervous tendencies, and is slightly above the average of the cases as a whole. A rational explanation of this would appear to be that such persons are usually more keenly alive to the importance of their condition, and are therefore more susceptible to advice, and more conscientious in following instructions as to the details of their mode of life. While, speaking broadly, the phlegmatic temperament in tuberculosis, is more conducive to good results than the irritable or nervous, I have repeatedly observed the greater ease with which the active co-operation and obedience of the patient could be secured in those with moderately nervous tendencies. With such there is usually no occasion for argument or explanation. A simple statement of directions is frequently sufficient to entail implicit compliance. As the nervous disturbances increase to some extent, however, the balance is at once thrown to the disadvantage of the individual, and in case of marked neuroses, is exerted powerfully in preventing or retarding improvement. Such influence is well illustrated in Class 5, where the pulmonary involvement per se in each instance was so slight as to almost insure recovery.

The further consideration of these cases is limited to Classes 3, 4 and 5, as being the only ones concerning which it is profitable to enumerate statistics. In these three classes out of a total of 88, 45 are shown to have improved, and 43 to have done badly. Of the latter number, however, 12 had gained for a time in Colorado, but subsequently failed for reasons not to be attributed properly to climate. In Class 3 a history of neurotic inheritance could be traced in 18 instances, or nearly half the cases. Of these 11 have shown pulmonary improvement. In Class 4, 21, or nearly two-thirds, have shown evidence of hereditary nervous influence. Ten of this number have gained in Colorado with respect to the tuberculosis. In Class 5 hereditary taint was strong in 12, or two-thirds of the entire class. Six have shown slight pulmonary or general improvement.

Of the 88 cases in these three classes, 51 present a history of an inherited nervous tendency, 13 may be fairly considered to be acquired, and 24 are in doubt, with no tangible means of ascertaining the facts.

Somewhat to my surprise the relative number of cases improved appears to be not materially different in those with inherited tendencies from the proportion obtained for the entire list, or for those without neurotic taint. It is important to note, however, that there has been a decided difference observed as to the *degree* of improvement, the gain usually being much slower and frequently more unsatisfactory in those with a history of nervous inheritance. I have occasionally recognized the pure acquirement of the nervous disturbance, or at least, its conspicuous aggravation to be developed from an intimate association with others afflicted with pronounced neurotic conditions. This has not been unusual in the case of husband and wife. I have not infrequently seen the development of nervous phenomena among several patients at the same resort attributable to the influence of a single subject of marked hysteria.

Thirty of the 88 cases with functional disturbance presented a history of inherited predisposition to tuberculosis. Of these 17 are also classed as subject to hereditary nervous influence. Fourteen of the 30 cases have done well in Colorado, despite the tubercular predisposition. Of the 17 cases, however, subject to *both* tubercular and neurotic hereditary influence, but 5 have shown improvement. The combination of the neurotic with the tubercular taint is apparently a factor of great prognostic moment.

The cases may be divided, irrespective of the degree of nervous disturbance, into three classes, with reference to the extent of pulmonary involvement. Without entering into a detailed explanation of the method of classification it is perhaps sufficient for present purposes to state that the first division includes those with comparative slight infection, the second those with moderate involvement, and the third those with extensive tubercular invasion.

Class A numbers 30, of whom 23 have shown pulmonary improvement.

Class B also contains 30, with 19 showing improvement.

Class C includes 28, of whom 3 have done well.

Attention is called to the fact that all the first class have gained except those with severe nervous complications; that more than half of the second class have improved, regardless of the degree or character of the nervous disturbance; and that, as illustrated in the third class, an extensive tubercular infection in neurotic individuals presents but slight hope of improvement.

As regards sex, there are 50 males and 38 females: The relative number of males is small in proportion

to the number in the entire list, from which these cases are selected. Of the 350 cases, 243 are males and 107 females. Thus only about one-fifth of the males are found to be subject to functional nervous disturbances, as compared with a little over one-third of the females. Twenty-two of the males with nervous disturbances, or 44 per cent. have gained, while 23, or over 60 per cent. of the females have improved. It is interesting to compare these figures with percentage of improvement obtained for males and females in the entire list. In the latter case the results are nearly equal, the female having a trifle over and the males a little under 63 per cent. These results as to the relative improvement in the sexes, singularly correspond with those obtained in a previous analysis of 200 cases in which the percentage for each sex was 69. The relatively greater gain made by the females with nervous tendencies over the males, is, I think, a striking confirmation of my former deductions concerning the influence of sex upon prognosis and management. I will quote briefly from my conclusions at that time:[2]

> Despite obvious adverse conditions, and contrary to established conclusions, the female has responded to the favorable influence of the climate equally with the male. . . .
>
> Lest this be regarded purely as an instance of the strange fallacies of statistics, I offer several possible explanations in support of my results. . . .
>
> In Colorado, the question of success or failure in the effort to secure arrestment depends largely upon the ability of the individual to conform to a proper regimen of daily life, entailing for its greater perfection certain physical and mental requirements. These, I believe, are possessed to a greater extent by the female. . . .
>
> I can not see that the separation from family is essentially harder for her to bear than for the male. On the contrary, she seems to adapt herself to strange conditions quite as quickly and as comfortably. While, in general, less opportunity is afforded for an existence in the open air, with judicious exercise, a life of more complete rest is assured, with perhaps many hours of sunshine. There is less chafing under restraint, less of the cares and responsibilities of life, less tendency to acts of imprudence, and, from my experience, more implicit obedience to detailed instructions. . . .
>
> It is but fair to add that the financial circumstances of the females in Colorado are in general relatively superior to those of the male. She does not usually seek change of climate unless proper provision has been made for her support. . . .

If these premises are correct it is easy to understand how the female, although obviously more subject to neurotic conditions and more susceptible to nervous influences, nevertheless, in the face of the tubercular infection, is better equipped by virtue of her inherent and acquired tendencies, to withstand their unfavorable influences upon the course of the pulmonary disease.

It may be mentioned further that the improvement was more frequent in those who were relieved from domestic cares and responsibilities of children. As regards previous occupation it is enough to state that the gain in Colorado was decidedly more pronounced in those who had led sedentary lives. Two-thirds of these cases were Americans, the Irish and Hebrew races also showing a comparatively large number with nervous derangements.

With reference to the *character* of the *nervous* disturbance I am unable to effect a satisfactory classification. As the cases have been observed purely from a clinical standpoint, I will only allude briefly to the general nature of the neurotic manifestations, recognizing the difficulties of elaborating an arbitrary analysis. The cases are divided in a general way into three classes, without reference to special symptoms.

The first includes thirty-four cases, presenting upon arrival evidences of considerable general restlessness with apparent exaltation of nerve forces. Twenty-one, or 64 per cent., have improved with respect to the lungs, while none have shown any perceptible increase of the nervous condition.

The second embraces twenty-eight cases exhibiting marked irritability of temperament with pronounced instability of nervous equilibrium. Ten, or 36 per cent., have shown pulmonary improvement.

The third includes twenty-six cases showing varying degrees of depression and hypochondriasis. Fourteen, or nearly 64 per cent., have improved.

A considerable number of the two latter classes have suffered aggravation of the nervous disturbances in Colorado, as will be considered later, either temporarily or corresponding to a coincident loss in the tubercular disease, or from purely external and easily attributable reasons. Three of each of these latter classes, however, are conspicuous examples of more or less continued exacerbation of the functional derangement from no well-defined cause.

These results are not incompatible with my general observations to the effect that in Colorado, as elsewhere, rather high degrees of irritability offer serious obstacles to a successful issue; that even considerable restlessness and excitation of temperament under appropriate management yields fairly satisfactory results; and that pronounced depression, while the type of neurasthenia exerting the most unfavorable influences upon the course of pulmonary tuberculosis nevertheless responds appreciably to the climatic change.

Insomnia and headaches were frequent special manifestations. Twenty-two suffered to a considerable extent from insomnia. Ten ultimately improved in this respect as well as in the lungs and general condition. In nearly every instance the gain has been slow and interrupted by periods of vexatious exacerbations of the sleeplessness. The majority of the remaining twelve showed no gain at any time, either in the lungs or the nervous disturbance. I have regarded the continued insomnia as of decidedly unfavorable influence upon prognosis, not merely from the loss of sleep and entailed exhaustion, but somewhat as an expression of the more profound nervous irritability with a general susceptibility to all depressing or exciting influences. Attention is called to the fact, although I am unable to give statistics, in this connection, that a very considerable number of pulmonary invalids obtain partial or complete relief in Colorado after having a more or less prolonged period of insomnia before arrival.

Fifteen of my patients were afflicted with migrain. Eleven have obtained relief, and have gained in other respects. In none of these cases however, have the headaches disappeared entirely. The degree of tubercular arrestment has been out of proportion to the neurotic improvement in this class. The latter has followed but slowly and unsatisfactorily a gain in the general strength. I have not sought, save in a few instances, to provide relief by attention to local causes.

Twenty-seven were victims of well-defined hysteria. Sixteen have shown pulmonary improvement, but remain subjects of the original neurosis, though some to a lesser degree on account of increased nutrition and suitable environment. Eleven had done poorly in every way, in eight of whom, as previously stated,

[2] Boston Medical and Surgical Journal, Sept. 16, 1897.

the pronounced hysteria was directly responsible for the unfortunate results.

An inquiry as to the *time of development* of the disturbances is perhaps of some interest. Of the 51 cases with hereditary influence the manifestation of the nervous condition was apparent in nearly every instance before the recognition of the tuberculosis, but was very frequently aggravated subsequently. Of the 37 in whom no family history of neurotic taint could be discovered, 10 may be considered safely to have exhibited rather pronounced symptoms before the onset of the tuberculosis but which became more marked later; 12 only after the development, or coincidently with it, and 15 unknown. Apparently the effect of the tuberculosis has been to render the pre-existing nervous disturbance more pronounced, to increase the susceptibility to such influences in those already predisposed by inheritance, and to provide the appropriate conditions for the acquired development, i. e., impaired nutrition, mental depression and auto-intoxication. Likewise, the previous existence of well-marked functional nervous derangement can but afford added opportunities for the development of tuberculosis, from the lessened resistance of the individual, and hence the increased receptivity of the soil to the agent of infection. Impaired general nutrition, while frequently a result, is also undoubtedly a potent factor in the causation of *each* diseased condition.

With reference to climatic influence, it may be stated that in almost no case were the manifestations of nervous disorder displayed for the first time in Colorado. Thirty-four cases suffered an aggravation in this State. Of these, 9 were rendered worse only temporarily and later improved satisfactorily in this respect. Twelve exhibited greater nervous disturbance coincidently with a corresponding loss of the tubercular condition, with increased impairment of strength and general nutrition. Seven presented exacerbations to be referred solely to sufficient external causes capable of application anywhere, as excessive dissipation, extreme burden of business cares, and unfortunate domestic relations. The remaining 6 became worse, from a neurologic point of view, in the absence of any apparent cause. Of the entire number (34) rendered more nervous, either temporarily or permanently after arrival, 19 died as a result of the pulmonary infection or have grown worse. The balance at the present time are showing varying degrees of improvement. Nine of these have made a remarkable gain in all respects, despite decided nervous disturbances.

Finally, of the 45 cases previously alluded to as having exhibited distinct pulmonary improvement, 39 showed an ultimate gain in the nervous disorder, and of the 63 cases showing no permanent loss, or doing well from the neurologic standpoint, 39 have improved with reference to the tuberculosis. Thus the results are:

	Cases.
Improved in both conditions	39
Improved in tubercular but not in nervous condition.	6
Improved in nervous but not in tubercular condition.	24
No improvement in either	19

The reasonable interpretation of this would appear to be, that the influence of the climate upon the nervous condition had been particularly advantageous in a large proportion of the cases, presumably by virtue of the pulmonary improvement secured with the increased nutrition. It is also evident that the climate has been not unfavorable, to say the least, for the considerable number who either showed an improvement or no change neurologically, notwithstanding a progressive loss in the tubercular disease. These conclusions are of interest in view of the oft-repeated assertion that the co-existence of nervous manifestations contraindicates a recourse to the Colorado climate for the consumptive. The statement of the alleged aggravation of the nervous condition with the resulting unfavorable influence upon the course of the pulmonary disease, presupposes the hypothesis that improvement in the functional disturbance must precede arrestment of the tubercular infection, and at the same time advances the argument that the nervous derangement is of more essential consideration than the tuberculosis. It has been my observation that the nervous disturbances have diminished almost invariably in proportion to the degree of arrestment and the gain in the general strength. I am convinced that the majority of cases temporarily aggravated, or even developed early after arrival, are due in great measure to purely psychical influences, as enforced absence from family and friends, inability to immediate adaptation to strange surroundings, and previously accepted theories as to probable climatic effects. Such cases usually respond favorably later to rational and appropriate management. It should, however, be conceded, I think, that occasionally certain cases, especially those with strong inherent tendencies and severe manifestations, do poorly, particularly in the high altitudes of Colorado. These cases have been comparatively few in my own experience.

While the existence of pronounced nervous conditions in pulmonary tuberculosis constitutes a factor of grave prognostic moment in any location, it would seem that the climatic consideration of the tubercular infection per se should be regarded as of paramount importance. I would also insist that the especial significance of functional nervous disturbance in pulmonary invalids, should be to add further emphasis to the necessity of strict personal attention to details of management, environment and mode of life.

A FASCICLE OF CASES IN SUGGESTIVE (HYPNOTIC) THERAPEUTICS.

Presented to the Section on Neurology and Medical Jurisprudence, at the Forty-ninth Annual Meeting of the American Medical Association held at Denver, Colo., June 7-10, 1898.

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The American medical world has shown itself easily affected, as a rule, by the current of events, medical and surgical, in Europe. The experiments of Koch with tuberculin, of Klebs, Loeffler and Roux with antitoxin, and the various suggestions with reference to organic extracts—cerebral, testicular, thyroid, etc.—that have crossed the Atlantic have received a ready attention, in some cases developing into a wave of enthusiasm, and have found practical recognition in employment by many of our progressive medical brethren. I would refer merely to the disappointment that some have experienced in applying these more or less authoritative procedures, and remark *en passant*, that the wisest of us are subject to mistake occasionally through the very earnestness of our desire to wrest from old Mors one at least of his dreaded instrumentalities for human decimation.

In view of the readiness of the American profession

to entertain foreign advice in therapeutics it seems inconsistent with that quality of mind that one well accredited *modus* has not aroused interest enough to have it accorded a fair trial. I refer to the hypnotic procedure, or what is otherwise termed suggestive therapeusis. I am sure that all who listen to these remarks have learned something of hypnotism, and whatever the opinion they may entertain concerning it the fact is conspicuous that for several years this form or variety of psychologic medicine has had its hospital or dispensary establishments in Austria, Germany and France, and names of wide reputation, like those of Benedikt, Kraft-Ebing, Charcot, Delboef, Binet and Bernhein, are associated with it. Some American physicians have ventured to treat patients in this manner, but it would appear that with a few exceptions they were merely experimenting, and too distrustful of results to make the method a real part of their professional equipment. Some, too, I judge to be tender on the side of reputation, apprehensive that they might be regarded as giving sanction to "a superstition," as hypnotism was rather vaguely termed recently by the editor of one of our periodicals. I can scarcely believe that any one here gives heed to the medieval nonsense that sensational and unscientific writers offer to the unlearned public under the title of hypnotism or mesmerism.

Having given several years to the observation of the phenomena of suggestion I have come to the conclusion that the hypnotic state is consistent with the human physiology, and not to be regarded as determining a positive pathologic phase of either mind or body, although its induction may prove valuable as an aid in diagnosis, I have also reached the conclusion that in hypnotic suggestion we have at our hands an agency, the power of which is not fully realized, for the treatment of many forms of disease. In this statement I merely confirm the utterance of many writers from the time of Braid and Esdaile to the present.

I shall proceed to give some account of a few cases from my notes of those patients whose maladies commanded more than ordinary consideration. Let me assume that those present are sufficiently familiar with the common methods of inducing hypnosis, although for my own part I can not say that I have any particular method. One of my earliest experiences was recorded about nine years ago:

Case 1.—Frank S., a young man 28 years old, came to me with a history of epileptic attacks dating back to his fifteenth year. His physiognomy, the spare figure, angular hatchet face, dark, acne-spotted skin, dull expression, jerky, irritable movements intimated the chronic epileptic. As the attacks were frequent and often in series, he was incapacitated for remunerative employment. Then, too, the sequelæ of a fit were becoming more severe and exhausting. He had been under the treatment of several specialists. Of one remedy he had taken $400 worth, according to his father, with alternations of effect, but no decided improvement. Hypnotism had been suggested to the family of Frank, and I was requested to try it, as a *dernier ressort*. The young man consenting, a trial was made, and at the first interview sufficient control was obtained to warrant going on. My object, it may be unnecessary to say, was to impress the mind of the patient with a strong sentiment of opposition to the attacks, to reinforce his will in this behalf, and also to exercise as much personal control as possible over such of his habits as needed correction. He was a cigarette smoker, used strong coffee, and was prone to excess in eating, while in some respects his social doings needed amendment. The hypnotic control enabled me to be quite thorough on this side of his life.

The effects of this treatment exceeded my expectations. In a month he began to improve. The attacks occurred less frequently, and his health in every respect showed amendment. After a time the treatment was given at irregular intervals, two or three weeks being allowed to intervene between a sitting, and when the patient's last report was made to me he had had no recurrence of the fits for three months, and had undertaken the transaction of business that required travel and exposure, a venture that previously would have been regarded by his friends as entirely out of consideration. In the course of my observation of this case there were developed certain phenomena that will, I think, be considered extraordinary, even if familiar with hypnotic cases. When the patient first came under notice his attacks occurred without warning. He would drop suddenly to the floor or ground as if struck by lightning, and on reviving a severe headache usually compelled him to rest a while, if not to sleep. During my treatment if an attack occurred he would be likely to come out of it with little more than a sensation of dullness that soon wore off. Twice the seizure occurred when I was within ready call, and then, to my surprise, I found that I could, in a few seconds, check the spasm and restore him to consciousness. On one occasion he fell to the floor in the presence of several persons, and was struggling violently when I came to his side. A sweep of my hands from the head to the knee suspended the convulsion and at my command he opened his eyes and rose to his feet, and within ten minutes was able to continue the business transaction he was engaged upon when he fell.

Case 2.—Mrs. E. M. of New Jersey, a woman of 50, of German parentage, vigorous and active, came to me with an account of prolonged attendance upon friends suffering from depressing fevers in spring time. Her appetite had failed, a distressing erythism had supervened rendering her unable to sleep or find repose in any direction. Such medical treatment as she had tried had but increased her distress and restlessness, and further endurance of the condition she declared unbearable. A strong, imperative nature, she seemed at first an unpromising subject for hypnosis, but yielded with comparative ease to the simple procedure of sitting in a comfortable chair and gazing steadily at the white knob of a door four feet or so distant. A brief manipulation of the head deepened the sleep into which she fell in less than ten minutes. Suggestions were made with reference to improvement of appetite, the recovery of nerve control and sleep. Two days later a second treatment of a similar nature was given, the lady reporting great improvement in general feeling, having slept well and relished her meals. This improvement was confirmed by the entire recovery of her usual vigor in the course of two weeks. This case is not offered as of an uncommon type.

Case 3.—Miss A., a lady of Boston, about 32, sent to me by her physician. She had suffered with an obscure cerebral malady for sixteen years; tracing it to nervous shock occasioned by a carriage accident. The focus of the disease lay in the situation of the right angular gyrus or anterior margin of the first occipital gyrus. From that point pain, almost constant when not under the influence of anodynes, radiated to all points of the head, being most severe in the course of the right optic nerve and of the great longitudinal sinus. A well-educated lady, with remarkable self-control, she described her symptoms with great clearness. It is an interesting confirmation of the doctrine of localization that her sight, especially in the eye opposite the supposed lesion, had gradually become impaired until she could not read ordinary print or distinguish objects thirty feet away. For relief of the pain, etc., she had visited specialists abroad and at home, and tried, she said, every kind of treatment—even to the late inventions of mental science and faith cure—and although at the suggestion of her last medical adviser she would now request me to try hypnotism she could feel little confidence in that. At the fifth interview Miss A. passed into the state of semi-trance, which state was repeated at the four or five succeding interviews. The procedure in this case was simply to sit by the lady while she reclined upon a lounge, to hold her right hand in one of mine, occasionally to manipulate with great gentleness the forehead; meanwhile commanding her in a mild tone to go to sleep. With this semi-trance came entire relief from pain and abatement in the extreme sensitiveness of the scalp that had been an accompaniment of the malady. Besides the suggestion of relief from the old head misery, I advised the taking of small doses of gelseminum tincture and the application of hot-water compresses to the painful parts. The improvement in this case, as described by the mother and companion nurse of Miss A. was marvelous. After the third treatment she was able to ride out and endure with comparative comfort the noise and jars of the street. A year later she called at my office and reported that she had had but an occasional memory of her old affection, and were it not for her defective vision would consider herself perfectly well.

Case 4.—Rosa P., 33 years old, of Russian birth, dark com-

plexion, strongly bilious in temperament, well developed muscularly and possessing the powers of endurance usual to her race. The malady was peculiar in its effects; hystero-spinal in origin, with centers of reflex in the lumbar and cervical plexus, it was exhibited chiefly by great tenderness and pain in the lumbar vertebræ and flexor contractures of both hands and of the cervical muscles. The contractures of the hands, when she was brought to me were apparently permanent, any effort to open them resulting in an intense and painful paroxysm in which the clinch was greatly increased and the arms participating in the flexure. The history of the case included ten years or more of hospital treatment and expert observation. The first attack, it was said, had come on unexpectedly when the patient was a girl of 15. She found her hands disposed to close and could not account for it. Belonging to an intelligent family, every available means were tried for her relief. In Russia, Austria, Germany and England she had been under treatment by specialists, Professors Benedikt and Krafft-Ebing among them, a variety of procedures having been undertaken, with but temporary relief, if any. Hypnotism had been employed, but only under repeated suggestions could the contractures be reduced for a brief space. Owing to some influence that was unpleasant in the hypnosis that was commonly produced, it had become objectionable, and the woman at first declined to submit herself to my treatment. However, after a brief interview she consented to a trial and passed easily into complete trance, and at command the hands slowly relaxed. On coming out of the sleep, which was profound, and without any transference of consciousness from one state to the other, the hands remained open and flexible, and continued so, enabling the woman to assist in household duties, etc., for three days, when they closed. Then she came again to me and was relieved of the contraction in the same manner. This woman remained under my observation and treatment for upward of three months, when she went south to live with a married sister. During this time her general health improved; the spinal myalia, which, when I first saw her, prevented but brief rest in any position besides that of sitting upright, also yielded gradually to the suggestive influence. In a letter received fully two months after her departure from New York she stated that her hands had not closed, although she feared they might, because of her inability to apply to me for treatment. I should state in this connection that I had little expectation of doing the patient any permanent benefit because of her unfortunate family environment and lack of necessary care. A year later I saw her, she being brought to my office by her relatives, who wished to have her placed in some public or charitable institution. Her physical state had become much worse, but the poor woman, with eyes swimming in tears, held up her hands to show me that they were still open and flexible.

Case 5.—This case, of a widely differing nature, has a peculiar interest because of certain phenomena. Mrs. M., a strongly built, energetic brunette of 35 years, attending lectures at one of the medical schools of New York City, came to me in February, 1895. She recounted certain nervous experiences that interfered imperiously with the performance of anatomic studies. She was totally unable to dissect. On entering the room where cadaveric material lay she was seized with a strange nervous excitement that compelled her to withdraw immediately, and a distressing sickness followed, the effects of which usually lasted two or more days. The origin of her neurosis she believed to be this: Ten years or so before she came to New York, her father had died suddenly of apoplexy. She was not at home at the time of his death, and on returning was not immediately informed of it, although she knew that he had been very ill. Going into his room, she was surprised to find him lying silent and unresponsive. While she stood at the bedside gazing in speechless anxiety at him, there burst from mouth and nose a stream of blood. This unexpected spectacle terrified her so extremely that for weeks she was subject to hysteric fits and on the border of insanity. For years afterward visions of that blood-stained corpse and bed appeared in her sleep and in her waking hours. A woman of more than ordinary strength of purpose, she had striven against the terrible memory, and believed, until she attempted to use the scalpel, that she had nearly overcome the Nemesis of her life. She did not prove an easy subject for hypnosis, but at length entered the semi unconscious state—which, I may remark here, is claimed by some writers to be the true hypnotic condition as distinguished from the mesmeric or magnetic trance. As it might be, however, the suggestions for mental calm and self assurance in the performance of anatomic work and other duty were given, and a half dozen sittings of the kind were given. In the course of six weeks Mrs. M. advanced in the degree of self-control until she, as testified by one of her classmates, could handle the instruments of dissection with coolness and facility.

During the winter of 1895 96 this patient reported to me at times, and to the effect that in pursuing her second year of study she had no trouble whatever, and that her recovery from the mental dread and solicitude of years was practically assured.

Case 6.—Mr. C. A., about 34 years old, by profession a lawyer; of excellent family. The history of the case is imperfect, and it is not necessary to dwell on what may appear to be very probable factors of etiology. Dr. F., who introduced the patient, desired to test the power of suggestion upon a mind confessedly under the influence of a delusion of fear that had continued for some years, and was becoming more accentuated. The patient, a clear-headed and rational man on other subjects, entertained a profound dread of being alone; would not venture to go from one room to another in his father's house without company, and it was only with great difficulty that he could be persuaded to go out of doors for a few minutes. When brought to my office he was in a state of excitement, with high pulse and pallid face. After some minutes of desultory chat, during which his nerves recovered a state of comparative calmness, I requested Mr. A. to sit in an easy-chair and to gaze as steadily as possible at the lens of a lamp used for laryngoscopic examinations, five or six feet distant; meanwhile I sat by his side holding his left hand in my right, one finger pressing upon the radial artery. At the beginning of the experiment his pulse ran quickly up to 120, and then gradually fell to 80, as nearly as I could estimate without consulting a watch. After sitting quietly in the attitude directed, I advised him to relax nerve and muscle as much as possible, giving himself up to a sense of ease and comfort. I gently stroked head and forehead, now and then repeating the admonition to be calm and comfortable. This was the nature of the first interview. At the next interview A. exhibited less excitement on entering my office, and a similar procedure was adopted as in the first, suggestions being added relative to the correction of his delusion. Repeated assurances were given of better self control, more steadiness of will, less attention to surroundings, more courage, spirit, independence, self possession, etc. This line of suggestive treatment was continued at succeeding interviews until the fourth, when I commanded him to leave his residence at a certain hour in the afternoon, and walk unattended around the block. This was done, and the circumstance related to me by A. with considerable satisfaction. A few days later he came to my office without attendance. In the meanwhile he had gone with a friend to visit the Hagenbach collection of trained animals, an excursion of two or three miles from his home. The spell under which he had suffered appeared to be broken, for after two more interviews I was informed by his old physician that an extensive tour in Europe had been arranged on which he (the Doctor) was to accompany Mr. A., and that my fee for services rendered would be honored on sight. Since that time there have been no intimations of a return of the trouble, and Mr. A. is not the candidate for early confinement in an asylum that he had been considered only a few weeks before I first saw him.

REPORT OF A CASE OF RAYNAUD'S DISEASE WITH PATHOLOGIC FINDINGS.

Presented to the Section on Neurology and Medical Jurisprudence, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY C. EUGENE RIGGS, A.M., M.D.

ST. PAUL.

HISTORY.

Mrs. M., age 64, weight 195 pounds, American, housewife. Had typhoid fever at age of 19, pneumonia at 53, measles, whooping cough, diphtheria, acute articular rheumatism at 50 years. Father died at the age of 76. Mother died at age of 71 of cancer of the breast. Has two sisters living, in average health, and one brother, whereabouts and condition not known. Two years before, the patient had noticed a peculiar numbness of sometimes one finger sometimes another of the left hand, which would last about half an hour. This continued at intervals for over a year. During this period the attacks of numbness came on about once a week, sometimes two mornings consecutively. She was, however, apparently well, when on the evening of Feb. 6, 1896, while going upstairs she was sud-

denly attacked with extreme numbness of the left hand and forearm, with a complete paralysis of motion and sensation in the same. She immediately went downstairs, when she found her hand as white as marble, friction giving her considerable pain. The hand remained white all night, and pain prevented sleep. Next morning the patient noticed the end of the thumb beginning to turn dark, and later other finger tips. The severe pain continued when not controlled by morphin, up to the date of admission to the City and County Hospital, Feb. 9, 1896.

On admission, it was noticed that the reddening was excessive, pulse 80 and somewhat irregular and intermittent, temperature 98.4. Finger tips of left hand were black, with exception of little finger, which was darker than normal. A dark streak extended up the dorsum of the hand between the thumb and forefinger to within three-fourths of an inch of the carpometacarpal articulation. There was loss of sensation and motion in the left hand, extending on the palmar surface to the metacarpo-phalangeal articulation, also loss of the sense of heat and cold over the same area. The arm was cold to junction of middle and upper third of humerus; veins of forearm and hand were very perceptible, giving the arm a peculiar marble-like appearance; the ends of the fingers of the left hand markedly shriveled on palmar surface.

At 11 P.M., February 10, on attempting to get up, she suddenly fell back in bed in an unconscious condition. The face became extremely dark, all respiration ceased, the pulse imperceptible except in carotids, where it could be barely felt. On ausculation, the heart could be only faintly heard. On the morning of February 11 two red areas appeared on the outer side of both thighs, which rapidly extended down the limb reaching the knee about 8 A.M., at which time a dark red spot was noticed on the heel of each foot, also along the external surface of the foot. At 8:45 the four outer toes began to turn purple and the outer aspect of the legs from knees down rapidly turned dark. The inner and anterior surface of the foot and leg was of a peculiar white color with markedly white veins coursing through the whole area. Patient complained of a very severe burning pain in the foot; the legs were cold to the knees. Apparent loss of motion and sensation in the limbs and feet. Patient was somewhat delirious and exceedingly restless. Tips of all the fingers of the right hand were of a dark purple color, but there was no paralysis of motion present in this member. In the right hand there was no development of the marble-like appearance preceding the reddened condition.

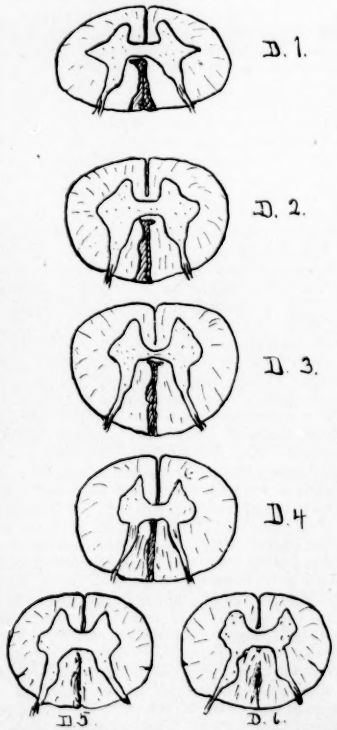
At the time of death local syncope had extended up the anterior surface of the left arm to the shoulder and the red color had extended up the dorsum of the arm, also in the axillary region down to base of ribs. The same condition existed in the right axillary region. Both legs were found to be perfectly rigid at 1 P.M., the flexors of the feet predominating. Marbled appearance of anterior surface of both limbs present after death, extending to about three inches above the knee. The brighter red condition on the inner side of the thighs changed shortly before death to a much darker hue. The right remained about the same as at 1 P.M. (Some edema of the lungs noted before death.) The slightly darkened spot which was noted on the left ear appeared perfectly normal after death, which was not the case with other portions of the body affected. Examination of the urine showed tube casts and albumin.

AUTOPSY.

Body very fat (weighing probably 200 pounds); rigor mortis well marked; postmortem lividity slightly marked over the back and under surface of the body. The thumb and all fingers of the left hand were black and gangrenous, the two distal phalanges being involved. On opening the calvarium the membranes of the brain were normal, except the pia mater, which was slightly edematous. The hemispheres of the brain were symmetric and of normal firmness. The vessels at the base of the brain showed the walls very slightly thickened, but no evidence of atheroma nor deposit of lime salts. On opening the thorax the pleural cavities were found free from adhesions; the lungs showed slight emphysema along the anterior borders, otherwise they presented no pathologic changes. The pericardium contained a small amount of clear straw-colored fluid. The heart was large and its walls infiltrated with fat. On section, a large postmortem clot was found in the right ventricle entangled in the tendons of the tricuspid valve. The cavity of the right ventricle was somewhat dilated. The left ventricle contained some liquid dark blood; its chamber was markedly dilated and the walls near the apex very thin (about one-fourth of an inch), and consisted of fat and degenerated muscle. The mitral orifice was stenosed, admitting only the point of a finger. This was due to old inflammatory thickening, with deposit of lime salts in the anterior leaflet, and slight thickening of the posterior leaflet of the mitral valve. The left auricle was markedly dilated. The muscle wall of the heart was soft and flabby and showed marked evidence of fatty infiltration, with fatty metamorphosis of its walls, best shown near the attachment of the papillary muscle and in the ventricular septum. The blood-vessels of the heart were free from atheroma. The aortic valves showed no pathologic changes. The wall of the aorta was smooth.

Abdomen.—The layer of fat of the abdominal wall was enormously thick—2½ inches in places. An old irreducible omental hernia was found at the umbilicus, which was retained in place by peritoneal adhesion. The opening through which this protruded was about an inch in diameter; the intestines, especially the colon, were markedly distended and the mesentery and omentum were infiltrated with fat. The left kidney was slightly enlarged, its cortex narrow and the pelvis filled with fat. The capsule stripped easily, leaving the surface smooth. The vessels on the surface were much injected, contrasting markedly with the pale parenchyma of the organ, which showed marked evidence of nephritis. The right kidney was smaller than normal, due largely to narrowing of its cortex. The capsule stripped with difficulty, tearing with it portions of kidney, leaving a roughened surface. The cortex was very narrow and its surface uneven, showing here and there puckered areas and a few cysts. The spleen was somewhat enlarged (almost twice its normal size) soft and pulpy and on section very dark. The liver was soft and flabby, slightly smaller than normal and its surface yellowish gray. On section there was visible slight fatty infiltration, and bile-stained areas and dark liquid blood exuded from the severed hepatic vessels. The gall-bladder contained one large irregular cylindrical shaped calculus about one and one-fourth inches in length and three-fourths of an inch in diameter, and with it several small dark granular calculi were present. The stomach showed nothing

unusual. The pancreas were slightly smaller than normal and presented a narrowing near the middle. The head of the pancreas, on section, was darker than normal, but of the usual consistence. The uterus contained a small calcified sub-peritoneal fibroid tumor over the right cornua. The spinal cord was removed, also the median nerve of the left arm from the bend of the elbow to the hand. The radial artery of the left hand contained dark coagulated blood from a point extending about two inches above the annular ligament. The vessel wall was not atheromatous, and no thrombus was discernible. A noticeable feature of the case was the very dark liquid character of the blood all through the body.

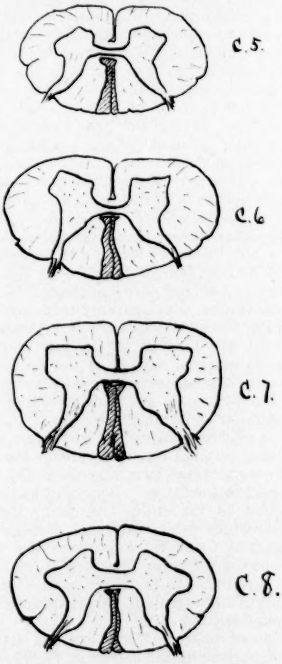


Area of degeneration in Case 9.—Raynaud's Disease. Rigg's Path. Lab.

MICROSCOPIC FINDINGS.

The brain, medulla, segments, C 5 to D 10 of the spinal cord and portions of the median nerve and the anterior cerebral artery were received in the laboratory Feb. 11, 1896. The brain and medulla were injected with carmine starch solution and placed in formaldehyde sodium-zinc-chlorid solution. The cord and median nerve were placed in Müller' fluid. After three months the hardening of the cord and nerve was completed in alcohol, followed by embedding in celloidin, cutting and staining by Weigert's and Weigert-Pal methods. The brain and medulla were kept one year in formaldehyde, etc., solution, when the medulla was embedded and cut in the same manner as the cord, the sections placed in Müller for a week and then stained by Weigert's method. Of the brain only a portion of the anterior cerebral artery was examined microscopically, after staining in paracarmine. The following are the findings:

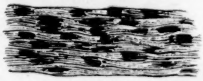
Median nerve.—Transverse sections showed many unstained and unparently shrunken fibers irregularly scattered through all the bundles. Longitudinal sections showed almost all the fibers unstained and shrunken in irregular located segments; throughout the entire course of the several portions examined there appeared to be a simple parenchymatous degeneration. The proportion of degenerated to normal tissue appeared to be about three to two. Many rather large capillary hemorrhages were observed in the sections.



Area of degeneration in Case 9.—Raynaud's Disease. Rigg's Path. Lab.

Spinal cord.—Numerous transverse sections from segments C 5 to D 10 inclusive were examined. All segments from the tenth and seventh dorsal inclusive appeared to be perfectly normal, except for slight capillary hemorrhages scattered through the posterior median columns. Throughout all the other segments examined, from the sixth dorsal to the fifth cervical inclusive, the posterior median columns showed degeneration and numerous capillary hemorrhages. This degeneration first very faintly marked in the middle of the mesial margin of the left posterior median of the sixth dorsal segment column and gradually widening until in the seventh cervical the entire

column area on both sides was involved, was throughout most complete on the left side and in the crescentric area near the gray commissure. The latter area seemed also to be the seat of the most numerous capillary hemorrhages.



Long. section Median Nerve.

Medulla.—The lower half of the medulla, or at least all portions below the restiform bodies, had unfortunately been destroyed in the process of removal. Numerous sections taken from various levels alone failed to show any abhormalities whatever.

Cross-section Median Nerve.

Anterior cerebral artery.—Sections from various portions of this artery showed only a very slight thickening of its external coat.

SUMMARY.

It will be seen that this case had a typic beginning—local syncope, accompanied by much pain and associated with local asphyxia in the same limb. The typic venous marblings were present in both extremities and were very pronounced. The gangrene was of the mummy-like order, coming on without blisters, and the characteristic conical finger points with their shrunken and shriveled skin were most conspicuous. The local asphyxia of the left ear was well marked. We find also asphyxia developed in the right hand without accompanying or preceding local syncope. Death ensued before the latter development of the disease could appear.

The course of this case was however markedly different from the clinical description outlined by Grasset. He recognizes three periods: that of invasion, lasting from a few days to a month; that of development, with the accompanying pains and the commencement of gangrene; and that of elimination of eschars, extending over a period varying from ten days to ten months, the mean duration being from three to four months.

Cold, traumatism, renal and cardiac disease, atheroma, malarial and local poisoning, diphtheria, grippe, gout, organic and functional disease of the nervous system are so often associated with Raynaud's disease that they assume an etiologic value. At times, however, no apparent cause can be found, in which case the affection may be termed idiopathic. The theory generally accepted today as to the pathology of the disease is that held by Raynaud himself, viz., that there is a contraction of the small arteries, a tetanic spasm of nervous origin of the great sympathetic. He believes in a central origin because of the symmetry of the alterations.

In the above case the postmortem would point to a renal and cardiac complication, though the marked cord lesion must not be overlooked, as a possibli etiologic factor. Had this last any relation to the symptoms? From its character it must have antedated the onset of the acute symptoms, though not those first observed by the patient herself. The bilateral areas involved most were not those through which most fibers from the upper extremities pass, but those of the lower extremities, which were latest affected. The left column was more affected than the right and the symptoms were much more pronounced on the left than on the right side. The degeneration of the left median nerve was probably due to the condition of the left hand.

This case was referred to me by Dr. J. B. Brimhall of St. Paul.

THE STRESS OF MODERN CIVILIZATION AS A FACTOR IN THE CAUSATION OF INSANITY.

Presented to the Section on Neurology and Medical Jurisprudence, at the Forty-ninth Annual Meeting of the American Medical Association held at Denver, Colo., June 7-10, 1898.

BY FREDERIC S. THOMAS, M.D.,
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In presenting a few thoughts upon this subject, I desire not to be exhaustive, but to present points merely for your consideration. The author does not claim the stress of modern civilization to be an exclusive factor in the causation of insanity, yet one which should not be dismissed without consideration. He believes that it is the most intimately associated with the formative period of life; that it is a causative factor in the development of neurotic temperaments. Instead of modern culture making the masses more resistive and better qualified for life's battle, in many instances, by reason of over-stimulation and faulty cerebral development, it tends to weaken the inhibitory qualities of the brain.

We are told that man in uncivilized life has but one source of pleasure, viz.: The gratification of his animal desires and passions. In his ultra civilized state, however, we find him possessed of another and higher condition—"a psychical existence—an intellectual life." This changed condition, the result of an irresistible evolutionary process, has transferred him from the field of ethnology to the domain of psychology.

A comparative study of mental alienation of both the uncivilized and the highly civilized races shows an unusually high per cent. of insanity in the latter. Omitting from our consideration epilepsy, trauma and their results, little or no insanity is observed among the unenlightened races. The higher the scale of intelligence and the more exacting the demands upon a people, the more likelihood there is apparently, of brain disease.

That civilization, and especially our modern civilization, should be a factor in its causation, though humiliating to admit, seems nevertheless to be true. Civilization itself is a departure from man's primitive condition. It is a development which gives to him a sort of dual existence and establishes within him an artificial standard. It has made new and extensive demands upon his energies; it has taken nutritive fluids out of their former and accustomed channels, that the brain might be supplied with the best vitalizing fluids of the body.

Anatomically we know the brain is made up entirely

of cells, fibers and ground substances, with the necessary framework of connective tissue, blood-vessels etc. If the processes going on in this structure be limited to its capacity, no harm is expected. If, however, the brain be subjected to the stresses of modern civilized life, a possible over-stimulation and consequent injury may result therefrom. Studying our subject from a histologic standpoint, we find that the nerve-cell belongs to the highest order of animal life aggregation. It possesses specialized nerve function and becomes a necessity in maintaining a proper relation between the infinite number of protoplasmic elements which compose the living animal.

We find that a mental process is the product of cell metabolism resulting from stimulation. The nerve fibers or processes from the nerve-cells, when bunched together in the great centers, must be insulated. There must also be communication between the cells of different and similar function, that the animal, as a whole, may fulfill its highest mission. We know that the muscle-cell, without its individual metabolism, would be useless, even though stimulated by an intact nerve-cell. The same can be said of a brain-cell. We know, in either case, perfect nutrition is essential. The latter being the most highly organized, would suffer the most from nutritive disturbances.

The immature elements of most recent development and highest in the scale reflect very early the disastrous effect of excessive or diminished nutrition. Considering the relatively large size of the cerebro-spinal system of a child at birth, the immaturity of its elements, and, in conjunction with this, the rapidity of growth in the first five years of life—from about eleven ounces at birth to forty ounces in the sixth year—we need not search further than environment for a possible production of early neuroses. Trivial causes produce profound impressions. Instability of the peripheral nerves, instability of the centers, lack of inhibition in the motor ganglion cells, accompany rapid development, diminished resistance and early exhaustion from undue stimulation. If this be true, will not the stress of modern civilization act most perniciously during the formative period of a human being's existence, by reason of undue stimulation, and from this reason will it not so weaken the nerve centers that the neuroses of childhood can but give place to mental enfeeblement or destruction in the adult?

"The prevailing tendency of modern civilized life is to over-stimulation of children. The tendency pervades our whole educational system. It permeates juvenile literature, it is manifest in childish recreations and has invaded the home. Such overstraining and stimulation of the nervous organism can not fail to cause harmful effects during childhood, and frequently produces neurasthenic and nervous temperaments in later life." The five senses were given to us by our Creator that the brain might take cognizance of His created energies. That we might approach nearest to His divine attributes, especially His omnipotence, the human brain was made of material most sensitive. Not that it could receive and record only the images about it by the aid of the reflected rays from the sun, or to analyze the sound waves, but also to receive and understand that which came to it through taste, smell and touch. In our environment of modern civilized life, the delicate structures of the ear and brain, which were so constructed as to recognize the tone, pitch and harmony of sound, are being shocked by the discordant screams of the locomotive, the noise of the street-car with its clanging bells, the rumbling of the heavy wagons upon our stony pavements, the monotonous cry of the newsboys, the auctioneer or the fruit vender upon our street corners. By reason of all this, the beautiful and refreshing sleep of childhood is disturbed and the growing brain, which demands so much repose during this period of life, has been made to suffer therefrom.

The human eye, even more delicate in construction than any other organ in the body, no longer has reflected upon its retinal expanse the beauty of field and flower; the rolling landscape; the crystal streams with their green verdured banks, or the blue, starry vault above us, but is made to witness the revolting scenes of men maddened by their scramble for gold, or begrimed by the heat of toil in the busy marts of trade. The delicate olfactory cells which gather strength and delight from the pure air of the country, laden with the aroma of growing flowers and ripening grain, which gladden the heart of childhood, are dulled and blighted by the smoke and stench of our cities. Instead of this maddening whirl and strife of modern civilized life, could the eyes of childhood but be limited to see nature in her pristine beauty; the ears hear only the sweet carol of birds and the melody in the rustling leaves of the forest trees; then the sweet lullaby songs of mother would never cease to ripple harmoniously in the chambers of memory. If these things could hold a place in our modern civilized life, no one would dare say that the stress of modern civilization was a factor in the causation of insanity.

UTERINE HYPERESTHESIA.

Presented to the Section on Neurology and Medical Jurisprudence, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY EPHRAIM CUTTER, M.D.

NEW YORK CITY.

Included in this are uterismus, vaginismus, esophagismus, caputismus, pedismus, spinismus, crinismus and all pains that are reflex from the uterus, either touchal or experienced subjectively alone. To show that such cases are common, permit the following illustration:

Mrs. A. complained of swelling and pain in both ankles, called rheumatism, but there was no morphology of rheumatic blood. Intra-uterismus was found and treated with iodoform vectors. It was cured and also the ankle joint troubles.

Miss B. had vaginismus so that she had to be etherized for an examination, which revealed an anteflexed and anteverted uterus. After the use of iodoform vaginal capsules the vaginismus was cured and afterward the uterine lesions of place were relieved by mechanical means.

Miss C., aged 30, could not swallow solid food. Bougies showed that there was no organic stricture of the gullet. Careful exploration revealed a verted and flexed uterus, relief of which was followed by the alleviation of the painful esophageal spasmodic actions.

Mrs. G., one of the best and bravest patients, was ill with a hyperesthetic swelling of the back of the left hand. I touched it gently. "Oh, doctor," screamed she, "don't touch my hand. I would rather you would knock me down." Rheumatism was looked for but its blood morphology was absent. I said that the womb must be at fault. She disputed it. But it was found to be hyperesthetic and retroverted. When these were relieved the hand got well.

Many women have complained of inability to wear shoes and walk, because their feet were so sore, and yet there would be nothing abnormal about the feet. But when their uterine hyperesthesia and lesions of place were relieved the feet were also.

A woman married and the marital functions were disturbed

by her screams of agony and by her collapse, so that every time connection was tried the family physician would have to be summoned. On one occasion—not marital—this physician gently touched her spine in examination and she fainted. This case was seen in consultation. Further history not known.

Calling on one of my uterine cases once, I was met with the exclamation, "Oh doctor, please excuse the disorder of my hair, as I can not bear the touch of comb or brush to my head.

Mrs. G., above alluded to, sometimes had hyperesthesia of the whole body, so that at night she could not bear the weight of bed and night clothes and was obliged to be nude.

What is pain, which is the main element of hyperesthesia? It is something invisible, imponderable, subjective, felt. It needs the medium of nerves which, fully paralyzed, abolish pain, as in etheric anesthesia. After many years' study the writer is inclined to take the ground that pain comes from a partial paralysis of the nerves. Smite with a birch switch and you inflict pain, but with a crowbar you can smite without pain because you kill the person smitten or completely paralyze the nerves near to or remote from the injury. It has seemed as though the uterine hyperesthesias unexplained by organic changes, arose because its stock of nerve force, dynamis or constitutional energy had been so exhausted by the lesions of function or place that the uterine nervous system was partially paralyzed and squealed in pain when it acted. Also that it steals from other parts of the body, whose nerves thus robbed of their share of dynamis squeal also. It is reasonable to expect that its relief must come by restoring to each autonomic organ its normal amount of nerve force by abolishing, if possible, the physical conditions of its cause.

As an inventor of pessaries, I have had to contend with uterine hyperesthesia as the greatest bane to their use. Hence what is said here is the outcome of a fight with conditions that have baffled gynecologists for ages. It is useless to use a pessary or, if you will allow the personality, the Cutter pessaries, unless the hyperesthesias are removed. There are exceptions but they are few. I beg, entreat, implore and beseech that this should never be forgotten. If so, we shall hear less of the hard things said against the use of pessaries. It is a pity that these instruments should suffer because of the disobedience to this rule—a pity, as otherwise more patients would be cured and less opprobia cast on the profession, which it really does not deserve.

I try to utter these moritural words with truth and soberness. There is a conventional disregard of uterine hyperesthesia. Lately I saw a report where a gynecologist examined and treated the females in a large insane asylum and found two-thirds suffering with hyperesthesia and uterine disease. Systemic works glide over this subject. If I am mistaken I shall be glad to be corrected.

A physician told me once that he had never dared use a uterine sound. It would be but guess work to diagnose internal hyperesthesia without it. I think the Simpson sound too big. I like a rigid steel sound, platinum plated, the size of a No. 1 vesical sound. From what I hear, I judge that uterine hyperesthesia is ignored as subjective, as a whim and as unworthy of attention.

As a rule, women bear pain well. Prof. H. L. Hodge of Philadelphia, used to say in his clinics, "When a woman complains, in ninety-nine cases out of a hundred she has a good reason for it. If you are not smart enough to find out what is the matter with her, say so, and never blame her as a malingerer."

Through patients I have heard of women doctors who used a cold and unanointed speculum in hyperesthetic virgin vaginas. This shows that woman's inhumanity to woman exceeds that of man to woman. I have been called rough by male physicians, but I never had a lady patient say so. Hence I invoke women practitioners to be specially on the watch for "uterine hyperesthesia," and never to undertake to use a pessary without first having removed the hyperesthesia, if present.

The "irritation" of Professor Hodge I call hyperesthesia. He taught its existence as a neurosis without any appreciable organic lesion. But the writer is of the opinion that it exists along with organic lesions, which lesions are curable without the knife in some cases. I have had extra uterine fibroids contemporaneous with mammary gland fibromas and hyperesthesia, that have been diagnosed as cancer, and yet they have been removed by diet and the principles here laid down, after the irritation of Hodge had been removed.

The metabolic changes in health are not confined to normal tissues and organs, but they are applicable and are going on in unhealthy organs or tissues. If healthy organs or tissues can be hyperesthetic it is more likely that unhealthy organs or tissues will be because they have less vitality. To illustrate: on Dec. 13, 1896, I was poisoned at an autopsy, on the proximal end of the first phalanx of my left little finger. Today there is a dermal tuberculosis, whitish, leprous, red, with flattened hard elevations pitted at the top.[1] If anything, the diseased is more hyperesthetic than the sound skin, as unconscious touchings which are unnoticed by the sound skin are hyperesthetic. In fact, galvano-caustic hurts more than on the sound skin. Do not then let the terms "irritation" and "hyperesthesia" be buried in Prof. Hodges' grave and mine own.

Debts of gratitude are due to McDowell, Atlee, Kimball, Sims, Thomas and other surgeons, for opening new fields of gynic diagnosis which to Professor Hodge were unknown; but the knife is not everything. Nor do women exist for laparotomy sections alone. The knife should be used in cases of hyperesthesia as a last resort. For example, a lady said that a distinguished surgeon (whom I love) decided that she needed an immediate laparotomy of an ovarian cyst, seated where she had hyperesthesia. Had he made a vaginal examination he would have found a case in question. Under the principles laid down here and diet, the ovarian and uterine hyperesthesia have disappeared.

A good test is the laying on of hands, practised, I am told, some 2600 years B. C., and now in Germany. Place the patient in supine posture. Put the right forefinger on the hyperesthetic uterus and the left palm over the hyperesthetic ovary. The dynamis thus conferred removed the pain in the last case in a few minutes. I should add that I have not been able to detect the cyst. In 1873 I learned from patients rubbing my well knee that the pain in my broken knee was relieved, when otherwise it had its own way.

Iodoform vaginal gelatine capsules have been found very useful. I have used them since 1862. Though it works most admirably, the bad odor of iodoform is its greatest objection, otherwise I place it at the very head of all medicines, opium not excepted. Aristol comes next to iodoform and is used the same way. It is a wonderful medicine. It ought to be a household

[1] Nov. 28, 1898, cured.

remedy for cuts and burns. I tried it last summer. When rolling, at our seaside cottage, after most had left, a barrel on to a piazza, my hand slipped and a rusty nail projecting from the supporting board penetrated the fascia of the palmar surface of my right wrist. It burnt. It bled. Immediately the whole hand was in hyperesthetic agony. Aristol powder was laid on, then absorbent cotton and a bandage. Shortly the pain subsided. Without suppuration, the wound healed kindly in a few days. The scar remained some time longer and now is gone. I can not help thinking that if uterismus is relieved as my manismus was, it is easy to see why women express their feelings of relief during its application. I think this bit of experience not out of place here as showing the power of aristol to relieve intra-uterine hyperesthesias. To make the vectors, mix aristol into pill mass with molasses which is a little thick, cut into proper size, apply mass to pin-headed wires three inches long that screw into a wire handle like a uterine sound, mould into cylinders with a spatula on a glass plate. Iodoform is used in the same way. Once one application of an iodoform vector to a 3½-inch hyperesthetic uterine cavity in one month's time was followed by a reduction to normal size. In this case the wife of a foreign ambassador at Washington was enabled to resume her diplomatic receptions, at which previously she had fallen insensible on the floor. Amitol is a new substitute for iodoform which I have found quite useful. Its whiteness, cheapness and odorlessness are recommendations. Gelatine vaginal capsules have long served a good purpose. It should be remembered that the meaning of our subject is a loss of nerve force. Restore this and sustain nature's biologic efforts is the way to cure. Those illustrative cases could be given, but as the injunction is to "write short papers," this must suffice.

120 Broadway.

THE SURGERY OF CAMP WIKOFF.

BY N. SENN, LIEUT. COL. U. S. V.
CHIEF OF THE OPERATING STAFF WITH THE ARMY IN THE FIELD.

(*Concluded from page 1355*).

ERYSIPELOID.

Erysipeloid, an acute inflammatory affection of the skin, described by J. Rosenbach, is a disease of the skin not often recognized. It is usually mistaken for erysipelas. The parasite was described by Rosenbach more than ten years ago, but it has never been classified. Attempts to cultivate it have failed so far. This disease is met with usually among persons engaged in the handling of fish and meat, that is, cooks and butchers. It is attended by very slight constitutional disturbances and its local progression is slow as compared with erysipelas. The starting point is generally a finger, where infection takes place through slight surface defects or a puncture. It consists, pathologically speaking, of a subacute inflammation of the lymphatic channels of the skin. The affected skin presents a bluish color instead of the bright red seen in erysipelas. Another and perhaps more important characteristic sign in the differentiation between erysipeloid and erysipelas is the appearance of the margin of the inflamed area. In erysipeloid the shading from diseased into healthy skin is gradual, the line straight, in erysipelas abrupt and the margin presents well-marked fan-shaped projections instead of a straight line. The thickening of the skin by infiltration in erpsipeloid is slight and the only thing the patient complains of is a sensation of burning or smarting. The disease travels in the direction and against the lymph-current, so that when the point of infection is some distance from the tip of the finger, this is reached in time by extension of the inflammation downward from the point of infection. The disease travels slowly, it usually takes a week or more before the inflammation reaches the base of the finger when infection takes place anywhere near its tip. The lymphangitis seldom if ever extends beyond the elbow joint. The infection may extend from one finger to another when the inflammation travels in a distal direction. The skin soon returns to its normal condition behind the zone of infection. A case of this kind came to the surgical ward for treatment.

Case 41.—Patrick J. M. McGeoch, age 24, kitchen employe, presented himself September 9, complaining of a burning, smarting pain in the right index finger, which commenced four days ago. Over the radial side of the affected finger, opposite the middle joint, is a small abrasion covered by a thin adherent crust. The skin half as far as the tip of the finger and an inch above this point is slightly swollen and presents a bluish red color. The discoloration is most marked on the dorsal side. At the proximal margin of the zone of inflammation the diseased gradually shades into the healthy skin, both in regard to color and swelling. Patient is able to follow his occupation. The case presents all the characteristic signs of Rosenbach's erysipeloid. An alcohol compress with oiled silk over it was applied. In three days the inflammation had extended to the base of the finger while the distal portion, the seat of the disease when the patient first came under observation, presented a normal appearance, the skin being somewhat shrivelled by the action of the alcohol application.

AFFECTIONS OF THE RECTUM, ANUS AND ADJACENT TISSUES.

Rectal affections in some form were very common among the returning troops from Cuba. It is fair to presume that some of the soldiers were the subjects of a mild form of hemorrhoids when they entered the service, but it is equally certain that none of them were affected with fistula or abscess. To show the disproportion of rectal disease between the recruits who applied for enlistment and the soldiers returning from the field, I will state that of 10,000 applicants examined in Camp Tanner last spring the following rectal affections were noted: Hemorrhoids, internal, 2; external, 219; inflamed, 1; fistula, 1; prolapsus, 2. I attribute the prevalence of rectal diseases among our patients in this camp to the following causes: 1, intestinal affections contracted in the camps and Cuba; 2, improper food; 3, the relaxing effect of a tropical climate; 4 frequent exposure. Few of our soldiers escaped diarrhea or dysentery. The irritation of the rectal mucous membrane could not fail in many instances to produce a catarrhal proctitis. The inflamed mucous membrane became permeable to the passage of pathogenic microbes, which so constantly infest even the healthy rectum. The loose pararectal connective tissue, under the influence of general causes, became more susceptible to infection, it is therefore not astonishing that we should have found so many cases of perianal, perirectal and ischiorectal abscesses and their consequences, fistulæ. Inflammatory affections of the rectum play also an important etiologic rôle in the development of hemorrhoids. We found in a number of cases a direct connection between an antecedent rectal inflammatory affection and the subsequent appearance of hemorrhoids. The intense tenesmus which attends catarrhal proctitis and dysentery causes muscular changes and lesions of the mucous membrane which often become the principal cause of pararectal inflammation and hemorrhoids.

PARARECTAL ABSCESS.

Under this head I will report all cases of suppurative inflammation in the vicinity of the anus and outside of the rectal wall that have been operated on in Camp Wikoff. In all cases the suppurative inflammation pursued a very rapid course. The pain, as a rule, was intense, and fluctuation could be felt distinctly in the course of four or five days. In high-seated paraproctitis the general symptoms were usually severe, a high temperature and a rapid bounding pulse. It was in these cases that the affection assumed the most progressive form. The abscess contents were always fetid, otherwise presented

the usual appearance of pus as found in acute abscesses in other localities.

Case 42.—Robert F. Stanley, age 22, Troop G, Ninth Cavalry, colored. Perianal and ischio-rectal abscess. While in Cuba had diarrhea for eighteen days—August 27 to September 1—had chills and fever. Reached Camp Wikoff September 3, on which day he had pain about the rectum before and during defecation and on sitting down. He was admitted to surgical ward September 8. By careful palpation a small area of circumscribed induration as large as a pea could be felt on the right side of the sphincter muscle and about one-third of an inch from the surface. This swelling could not be detected from the rectum. Pain was greatly increased under pressure. A small incision was made and about half a dram of pus escaped. The little cavity was washed out with peroxid of hydrogen and carbolized water and loosely packed with a strip of iodoform gauze. As an external dressing a hot moist antiseptic compress was used and held in place by a T bandage. Immediate and almost complete relief followed the operation. On the ninth, the temperature rose to 100 degrees F., on the tenth to 101. The pain was intense and referred to the opposite side of the rectum. September 10, a fluctuating swelling could be felt from the perineum and the rectum. The abscess bulged externally as well as on the rectal side. The patient was again anesthetized and the abscess incised through the perineum to the left of the median line. A large quantity of extremely fetid pus escaped. As the undermining was extensive two counter-openings were made, one below and one above the first opening. Two fenestrated rubber tubes were employed in draining the large cavity. The abscess was washed out with carbolized solution and peroxid of hydrogen, and the moist antiseptic compress applied. The pain was relieved at once and the discharge after the operation slight. No tendency to further undermining, on the other hand all indications point to an early and permanent healing of the abscess cavity.

It is in cases like these that practitioners so frequently make a serious mistake by postponing from day to day opening and draining of the abscess. If we had deferred the operation for another day or two the abscess would have ruptured into the rectum and would have led almost inevitably to the formation of an internal or complete fistula. The horseshoe fistulæ following cases of ischio-rectal abscess, so frequently found in any of the large surgical clinics are the best proof of the necessity for early operative interference. The rule should be to open such abscesses early, from the external surface, and if fluctuation can not be felt from this direction but from the rectum, the tissues on the side of the rectum can be tunnelled with forceps after making a superficial incision, until the abscess cavity is reached. The surgeon must so conduct the treatment that the formation of a fistula can be avoided, and this can be done in nearly all, if not all, cases in which the abscess is opened before it ruptures into the rectum.

Case 43.—Alva J. Vananken, age 27, Troop K, First Cavalry. Perirectal abscess. On his last day in Cuba the patient had a mild fever and diarrhea; the latter persisted fifteen or sixteen days. For the last ten days has had a throbbing pain in the post anal region. An abscess found and opened in the median line, between the anus and coccyx. Under ether anesthesia the abscess cavity behind the rectum was freely opened with the Paquelin cautery, taking the fistulous opening in the median line as a guide for the incision. The cavity was thoroughly disinfected and packed with iodoform gauze, over which the usual moist dressing was applied. Rapid healing of the cavity by granulation.

Case 44.—Robert Sylvester, age 24, Company G, Fourth Artillery. Has been ill with typhoid malarial fever while in Cuba. Returned from Cuba on the steamer *Leona*, and reached Camp Wikoff about September 1. Soon after his arrival he noticed pain on the left side of the rectum. The pain and tenderness increased rapidly in intensity. September 7, he was admitted to the surgical ward and the operation was performed without anesthesia three days later. At this time the abscess was prominent on the side of the anus and the overlying skin presented an inflammatory blush. Fluctuation very distinct from the rectum as well as from the surface. The abscess was opened by a single incision and tubular drainage established, as the incision was large enough to serve for drainage. After disinfection of the cavity and packing it lightly with iodoform gauze, a moist antiseptic compress was applied. The patient was very weak at the time the operation was performed, but gained sufficiently in strength in a week to warrant his transfer to a hospital in Philadelphia.

Case 45.—Joseph Barret, age 28, Third Infantry, Company G. Ischio-rectal abscess. About the time of the surrender of Santiago had general malaise, fever, vomiting and diarrhea for which he has since been on the sick list. Several days ago he began to experience pain in the rectum which has increased steadily since, and at the time he was admitted to the surgical ward the ischiorectal abscess had opened spontaneously on the right side just within the anal margin. General health much improved. On August 31, under chloroform anesthesia the abscess cavity was distended with peroxid of hydrogen for the purpose of ascertaining its exact size and location. A grooved director was inserted into the fistulous opening and used as a guide in laying open the abscess cavity freely with the knife point of the Paquelin cautery. The abscess cavity was disinfected and packed loosely with iodoform gauze over which the moist compress was applied. He improved rapidly after the operation and a few days later was transferred to a hospital in Boston.

Case 46.—William Head, age 20, Eighth Ohio Infantry, Company G, enlisted two and a half months ago. Admitted to the surgical ward with a history of malarial fever and dysentery in Cuba, followed by ischiorectal abscess which discharged itself near the anal orifice on the right side. Discharge continues profuse. The peroxid of hydrogen test was applied to ascertain the extent of the abscess cavity which was found to extend high up into the ischiorectal fossa. Owing to the marked anemia and general debility a counter-opening was made lower down and thorough drainage secured, in place of opening the abscess cavity freely with the Paquelin cautery. Chloroform was used as an anesthetic. The general and local conditions improved promptly after the operation.

FISTULA.

The spontaneous rupture of a pararectal or ischiorectal abscess into the rectum is generally followed by the formation of a fistula. If the abscess communicates with the rectum its existence can be surmised from the intermittent discharge of pus and local symptoms which refer to the rectal lesion. An internal fistula of such an origin is often made complete by the abscess finding eventually an external outlet somewhere in the anal region. An external fistula caused by the opening of a pararectal abscess not infrequently becomes complete by the destructive process penetrating the rectal wall. I have long ago abandoned the probe in differentiating between an external fistula and a complete one. Injection of peroxid of hydrogen into the cavity under pressure makes a positive diagnosis at once. If the fistula is external the abscess cavity becomes tense, if complete the peroxid foam enters the rectum and will escape from the anus. The probe is only used after the test has made the diagnosis and then only as an aid in performing the necessary operation. In diagnosticating the existence and location of an internal fistula the rectal speculum is of the greatest importance. Rectal fistula will be less frequently met with when the profession as a whole recognizes the importance of early operative interference in cases of pararectal abscess. In my surgical work in Camp Wykoff only two cases of rectal fistula presented themselves for operative treatment.

Case 47.—Lieut. G. W. Goode, Troop I, Ninth Cavalry. Hemorrhoids and fistula. He was admitted to the surgical ward August 24. He has been almost habitually constipated, and has been much in the saddle. He knows of no definite preceding illness to account for present condition. He has had much pain and bleeding on defecation, pain persisting for an hour or two after. Examination reveals large internal and external hemorrhoids and an incomplete internal fistula following the rupture of a post rectal abscess, into the rectum through the middle of the sphincter muscle, posterior side. The abscess cavity, the size of a walnut, was freely laid open upon a grooved director with the knife point of the Paquelin cautery. The incision was carried directly backward through the median line. The hemorrhoids, two in number, affecting the posterior segment of the anal ring were removed by clamp and cautery. The abscess cavity was loosely packed with a strip of iodoform gauze. The rectal tampon remained for two days, The patient made a rapid recovery and was able to leave the hospital September 13. The agonizing pain attending and following each bowel movement disappeared immediately after the operation.

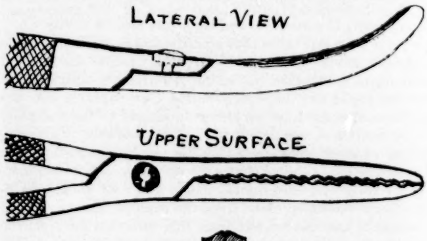
Case 48.—John M. Boyd, age 29, Troop G, Third Cavalry, enlisted four months ago. Admitted to the surgical department of the General Hospital August 27. His health was

good until he went to Tampa, June 8. At that time he suffered from diarrhea which was persistent, but did not prevent his doing duty in the saddle. For the past five weeks and following a severe pain in the rectum which continued several days, he has noticed a discharge of pus from the rectum. The pain did not disappear entirely after the abscess ruptured into the rectum and was always aggravated during defecation. August 28, under chloroform anesthesia the sphincter ani was dilated, the internal opening was found, the cavity distended with peroxid of hydrogen, external counter-opening made by the aid of the grooved director and the intervening tissues divided with the Paquelin cautery. Iodoform gauze packing and dry dressing. The internal opening in this case was just above the sphincter muscle, the abscess on the right side of the rectum. Rapid healing of the abscess cavity.

HEMORRHOIDS.

A large number of hemorrhoid cases came to the surgical ward with the desire and expectation of receiving the benefits of a radical operation. I am satisfied that only a small percentage of those affected were willing or prepared to be subjected to an operation. Some of the cases examined peremptorily declined to receive treatment knowing well that the results would put one claim for pension beyond their reach. In my capacity as operating surgeon of the camp I was very anxious to curtail the list of pensioners of this war by performing operations for surgical affections which, if left alone, would furnish a just claim upon the Government. On the whole, I found the colored soldiers much more willing than their white comrades to be benefited by surgery. They proved themselves worthy of their hire in the hospital as well as on the battlefield. Too much can not be said in praise of our colored soldiers. They showed a staunch faith in their doctors as well as their commanders, and were ready at all times to follow their advice as well as the commands of their officers. Nearly all of the hemorrhoids operated on showed pathologic appearances which demonstrated their recent origin. In a very large percentage of cases the first manifestation of hemorrhoidal condition was preceded by intestinal disturbances, diarrhea or dysentery. Fortunately, I had two Paquelin cauteries at my disposal as soon as the operating tent was opened. As I said in the beginning of this paper, my instrumentarium at first was a very scanty one. Instruments, however, began to come, day after day, and finally I had an excellent supply, including a number of cases for special work. The absence of a proper pile clamp from the outfit of the surgical ward at the outset, necessitated the use of something as a substitute. This was found in a curved hemostatic forceps. Except for its lightness, and therefore comparatively inefficient grasping power, this answered the purpose admirably. In fact, the facility and accuracy with which the hemorrhoidal swelling could be clamped and isolated, the small space required for its use, and its general convenience and ease of handling as compared with heavy clamps, now in the market, led to the devising by Major Adams of Chicago, of a hemorrhoid clamp similar to the forceps used, but so constructed as to obviate the defects of weakness and imperfect grasp found in that instrument. The use of the forceps as a clamp has demonstrated that the amount of pressure and crushing exerted by the old-fashioned instruments are unnecessary and uncalled for; also that there is no need of ivory plates to prevent the transmission of heat through the metal of the forceps to the underlying mucous membrane, as in no instance was any ill effect observed from this cause. Another advantage of the narrow blade forceps has been demonstrated in the absence of any hemorrhage whatever after operation. The new clamp has blades with a serrated grasping surface 5 cm. long, curved on the flat, the width of the blades closed is 9 mm., their thickness 6 mm., beveled away from the upper to the outer edge for 1 mm. The object of the bevel is to allow of the operation of the cautery with the least possible contact with the metal of the clamp, to avoid heating. The blades come into contact at the point first, so that uniform pressure is exerted the whole length of the blades when closed, and the hemorrhoid can not escape its grasp at the point, as often happens with the ordinary clamp.

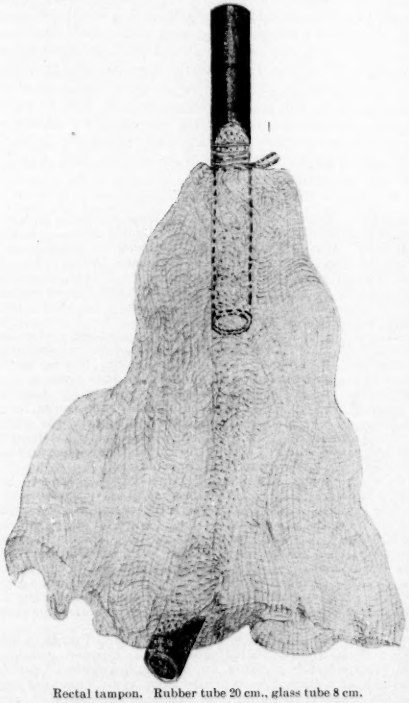
The handles are arranged like those of a needle forceps. With one exception the hemorrhoids were removed with the knife point of the Paquelin at a dull red heat, after clamping the swelling at its base. The hemorrhoid was first grasped with a dissecting or hemostatic forceps, when the base of the cone elevated to the desired extent was grasped and clamped with the forceps and the mass outside of the grasp of the instrument shaved away with the cautery. The operation of removal was always preceded by dilatation of the sphincter. The patients were always properly prepared for the operation the day before. The rectum was thoroughly cleared out by the administration of a cathartic and irrigation. The last enema was given on the morning of the operation. As a rule, two or three seizures were made. After dilatation of the sphincter the hemorrhoidal swellings were located and grasped with forceps so that the work of clamping and cauterization could proceed without interruption. Care was exercised in every case not to remove too much tissue; due allowance was given for subsequent contraction. The anal region was shaved and prepared in the same manner as for operations in other localities. One of the principal sources of pain after operations for hemorrhoids has been the protrusion and swelling of the cauterized surfaces. For many years I have succeeded in preventing this very painful post-operative complication by resorting to drainage and rectal tamponade. This method of dressing rectal wounds after this operation is not sufficiently known and practiced. Those who have not tried it might entertain a fear that it is a source of distress rather than comfort. Quite an extensive experience with this method of after-treatment enables me to make the unqualified statement that the rectal tampon, properly applied, is well borne by the patients and makes the use of anodynes superfluous. I never administer opiates after operation for hemorrhoids. The rectal tampon not only obviates unnecessary pain, but it also is almost an absolute protection against secondary hemorrhage and more than this, it provides for free rectal drainage and constitutes the best possible dressing for the cauterized surfaces.



Hemorrhoid clamp, devised by Major Adams.

When I first used this tampon, I was under the impression that it was something new, but I learned later that Mitchell Banks had used a very similar contrivance before. The tampon is made by taking a piece of rubber tubing eight inches in length and inserting into it a glass cylinder three-fourths of an inch in diameter and about 2 inches in length. The glass tube is placed where the gauze tent is tied over the rubber tubing for the purpose of furnishing a support to the string with which the gauze tent is tied upon the tube and to insure patency of the tubular drain. The rubber tube should project well over

the glass cylinder on the rectal side. The gauze tent is made of one or two layers of iodoform gauze. After completion of the operation the tent is carefully folded and the upper portion covered with vaseline. The tube is then inserted into the rectum to the depth of three or four inches and the space between the tent and tube packed with strips of iodoform or plain sterile gauze. After the required amount of packing is inserted the tampon is pushed in the direction of the rectum sufficiently to bring the pressure above the grasp of the sphincter muscle. In doing this the projecting mucous membrane and what may remain of the external hemorrhoids are completely reduced. The gauze outside of the anal orifice is then wound around the tube and forms a part of the external dressing. Over the gauze a wide ring of absorbent cotton is applied and the whole retained in place by a T bandage. The tampon should remain for 24 to 48 hours.



Rectal tampon. Rubber tube 20 cm., glass tube 8 cm.

In removing it traction is made on the gauze tent sufficiently to bring the packing within easy reach when it is removed before an attempt is made to extract the tube. After the removal of the tampon the patient should be given a laxative and after this has acted the cauterized surfaces now minus the eschar are protected by applying carbolated vaseline or some other antiseptic non irritating ointment. I have made it a rule to keep the patient confined to bed for at least a week, still better two weeks. The cases of hemorrhoids operated upon in this camp with very few exceptions have been men whose general health was much impaired, yet in every case the wounds healed quickly and in the most satisfactory manner under the treatment outlined above.

Case 49.—M. J. McNulty, age 31, Company D, Sixteenth Infantry, enlisted six months ago. Has had small hemorrhoids for two years, causing inconvenience only after heavy drinking. In June, while in Florida, bleeding at stool occurred for the first time. Since he suffered from malarial fever and diarrhea during the Cuban campaign, he has suffered from profuse bleeding on defecation. September 3, under chloroform anesthesia, three hemorrhoidal swellings were removed.

Case 50.—George Morton, age 47, sergeant Ninth Cavalry, Troop A, colored, has been in the service ten years and seven months. Had dysentery two months ago, since then has suffered from pain in the rectum and bleeding with each evacuation of the bowels. August 26, under chloroform anesthesia, three hemorrhoids, partly external and partly internal, were removed by clamp and cautery.

Case 51.—Jesse Donaldson, age 30, Troop M, Ninth Cavalry, colored, enlisted three months ago. While in Tampa, patient suffered from malarial fever and diarrhea, the latter continued for three or four days. Has not been well since that time. Since August 1, he has been much inconvenienced by a hemorrhoidal affection which developed recently. Operation performed under chloroform narcosis, September 2. Three internal hemorrhoids, two posteriorly, one at upper right quadrant, were removed in the usual way by clamp and cautery.

Case 52.—Claude F. Hall, age 23, Company G, Sixteenth Infantry, had hemorrhoids about four years ago, but not so severe an attack as the present. Recovered without operation. Has been in the service since the 17th of September, a year ago. Following an attack of malaria and diarrhea in Cuba, he has been suffering from hemorrhoids for the past six weeks. He has no bleeding, but the hemorrhoids have been protruding constantly and are very painful. September 7, under chloroform anesthesia, three internal hemorrhoids were removed in the usual manner by clamp and cautery. They were located respectively in the posterior right and left quadrant.

Case 53.—James Jervis, age 19, Company K, Thirty fourth Michigan Infantry, enlisted three and a half months ago. Had diarrhea two weeks, before leaving Cuba. Has had much pain and bleeding with movements of bowels since. Never had rectal trouble of any kind before. August 31, under ether anesthesia, two internal hemorrhoids were removed.

Case 53.—Ora Keithley, age 23, Troop M. First Vol. Cavalry, first suffered severe pain from hemorrhoids in July, when on duty in Cuba. He had had previously an attack of rheumatism from exposure to rough and wet weather and sleeping on wet ground. On September 7, three hemorrhoids, partly external and partly internal, were removed.

Case 54.—Horace Carden, age 24, Troop M, First Vol. Cavalry, has suffered off and on for three years from hemorrhoids, the present attack was not preceded by any bowel complaint or other illness. Has had no bleeding, but much pain and itching. Operation under chloroform anesthesia, September 8, when three internal hemorrhoids were removed.

Case 55.—Silas McGovern, age 28, Troop A, Ninth Cavalry, colored, has been in the service three years. Patient was admitted to the surgical ward September 3. One week ago, directly following an attack of diarrhea, he noticed pain in the rectum on defecation. The mucous membrane of the rectum protruded with each stool. Day after admission the patient was chloroformed and three internal hemorrhoids were removed. The appearance of the swellings indicated their recent origin. The mucous membrane was in a state of catarrhal inflammation. The posterior half of the anal ring was principally affected by the hemorrhoids as well as by the catarrhal inflammation.

Case 56.—Joseph Etter, aged 19, Troop I, Ninth Cavalry, colored, has suffered for the past two months from hemorrhoids which he believes were brought on by heavy lifting. Since the supposed "strain" he has experienced severe burning pain with each movement of bowels and profuse bleeding. Pain has been persistent after stools for several hours. September 8, under chloroform, three large, dark-blue hemorrhoids were found, one on right and left side posteriorly, and one on anterior left quadrant. The swellings were removed as usual by the use of clamp and Paquelin cautery.

Case 57.—Lee Shanks, age 26, Troop A, First Vol. Cavalry, has been in the service three months. He has been suffering from hemorrhoids for the past month with no illness preceding. He has had much pain after defecation, but no bleeding. Under chloroform three external hemorrhoids were removed, September 2. One of the swellings occupied the posterior wall of the rectum to the right of the median line, one to the left of the median line posteriorly, and the third in the anterior left quadrant. The hemorrhoids were disposed of in the usual manner.

Case 58.—Corporal Samuel H. Edwards, Troop C, First Cavalry, began to suffer from profuse bleeding on defecation the

latter part of July, following an attack of diarrhea while on duty in Cuba. Pain has not been severe at any time. September 10, under chloroform anesthesia, four very large internal hemorrhoids were removed by clamp and cautery, two from either side of the median line anteriorly. The hemorrhoids in this case were distinctly venous, the swellings being composed of ectatic veins almost exclusively.

Case 59.—Henri Meuronval, age 43, Company F, Second Volunteer Engineers, has suffered from hemorrhoids since puberty, with exacerbations at varying intervals. Recently much pain and bleeding. Examination under chloroform, September 11, revealed a large internal venous hemorrhoid on the right side, which, owing to the fact that the Paquelin cautery did not work that day, was treated by ligature. Before the silk ligature was applied, the mucous membrane at the base of the swelling was incised. An ulcer as large as a dime was detected directly over the sphincter muscle in the median line and posterior surface. This ulcer was evidently the remote result of a retroanal abscess which occurred a year ago. Since that time the pain during and after defecation has been much more severe. Besides stretching the sphincter, preliminary to ligation of the hemorrhoid the superficial fibers of the sphincter muscle were divided, carrying the incision through the center of the anal ulcer. Rectal tamponade as usual. The pain was relieved promptly by the operation.

Case 60.—Capt. Nat Phister, age 44, Company G, First Infantry, has had attacks of hemorrhoidal distress in 1888 and 1893 but not so severe as at the present time. He has suffered severely with present attack since August 19, the exciting cause being constipation. The suffering was much aggravated by a long ride in the saddle which he was compelled to take while the hemorrhoids were prolapsed. Since that time has had severe pain and constant muco sanguinolent discharge, necessitating the wearing of a diaper. Under chloroform a medical operation was performed September 8, consisting in the removal of two large hemorrhoids, largely external, and affected by extensive excoriations. The operation afforded the desired prompt relief.

Case 61.—John M. Dixon, age 40, Company B, First Infantry, had an operation seven years ago and had no trouble after that until about the first of August, when after a prolonged attack of dysentery he began to suffer with prolapse of the rectum. He has been in the service seventeen years and when last attack occurred he was in Cuba. He reached Camp Wikoff September 13. He has been greatly debilitated by the dysentery, and the prolapse occurs whenever he assumes the erect position or attempts to walk. Has much constant distress with pain, smarting, itching and occasionally bleeding. Under anesthesia operation was performed September 14. A large hemorrhoid was removed from the posterior aspect of the rectal wall and a vertical strip of mucous membrane by clamp and cautery. A smaller swelling and strip of mucous membrane were removed from the left quadrant in a similar manner. Rectal tamponade. Strict directions were given that the patient should be kept in the recumbent position for at least a week.

Case 62.—James Skinner, age 28, Troop H, Ninth Cavalry, colored, was sick in Cuba with dengue fever, about twenty days, beginning about July 14. Recovered only partially from this before (beginning August 14) he had an attack of malarial fever lasting fifteen days. During both attacks he had poignant diarrhea. During the early stage of malaria the hemorrhoids appeared, with much pain, prolapses and bleeding. On September 13, under ether narcosis, two internal hemorrhoids were removed from the posterior wall of the rectum middle line, and the right posterior quadrant. Patient's health much impaired, anemia marked.

Case 63. John Holloman, age 22, Troop B, Ninth Cavalry, colored, has always been in good health until the latter part of July, when he had diarrhea for three days while on duty in Georgia. Since then he has had pain on defecation, prolapse of the bowel and sensation of incomplete evacuation, but no bleeding. September 15, the patient was etherized and four internal hemorrhoidal masses removed by clamp and cautery.

Case 64.—Abraham Hill, Company C, Twenty-fourth Infantry, colored, has been in the service twelve years. About eight years ago he had hemorrhoids, which were operated on successfully. For the past three months, while on duty in Cuba, he has been suffering great pain on defecation and slight bleeding. Rectal prolapse at stool, always easily reduced. Has enjoyed fair health and attributes the attack to the heat and dampness of the Cuban climate. Operation under chloroform anesthesia performed September 16. Three very large internal hemorrhoids, located posteriorly and laterally, were removed in the usual way by the clamp and cautery.

The cases related above are instructive in showing what kind of surgery may be expected among soldiers who have participated in a campaign in a tropical country, subject to its indigenous diseases and debilitated by its climate, improper food and exposures. The results obtained must also counsel the military surgeons to practice their art not only on the battlefield, but also for surgical lesions caused independently of wounds and so often overlooked in the field hospitals. I have to record only two deaths, and both patients were operated on in the wards of the general hospital, being too weak to be transferred to the surgical ward. Both of them were low with typhoid fever complicated by large metastatic abscess, in one the parotid, in the other the submaxillary being involved. One died the next day after incision and drainage, the other on the third day. I am satisfied that many of our cases of phlegmonous and typhoid abscesses would have died without timely and thorough surgical interference. In many of the other cases, more especially hemorrhoids and fistula, the operations performed will restore the men, with the aid of proper general treatment, to their usual condition, and cut them off from the pension list. In all aseptic cases the wounds healed by primary intention, the best possible proof that good surgical work can be done in an operating tent in the field, and with very limited facilities for carrying out aseptic precautions. Since writing the above paper, a number of interesting surgical cases have been operated on in the surgical ward, which I will now report under the head of

MISCELLANEOUS CASES.

Case 65.—Edward J. Hill, aged 23, Troop I, Ninth Cavalry, colored, enlisted three months ago. Painful tetanoid spasm following gunshot wound of heel. About two months ago, while in Tampa, accidentally shot himself through the left heel with a Krag-Jorgensen carbine (30 cal.). The bullet passed transversely in an oblique direction through the os calcis. There is no evidence of comminution of the bone, the contour being well preserved and the surfaces smooth. While under treatment for the wound, he thinks he contracted "rheumatism in both loins." He has suffered twice from painful tetanoid spasm of the gastrocnemius, the attacks lasting about three hours, then subsiding as suddenly as they came on and leaving the leg painless and useful. He entered the hospital August 28, suffering from a third attack which lasted more than twenty-four hours, subsiding suddenly during the night after his admission. The gastrocnemius is firmly contracted, the heel raised, and any attempt to extend the foot aggravated the pain. No tenderness of heel or scars.

Case 66.—Wade H. Bell, age 21, Company A, Sixteenth Infantry, enlisted May 23. He has been troubled with varicocele for the past two months. It causes soreness and pain on walking any distance, incapacitating him for guard duty, and he believes the difficulty is gradually increasing. He first noticed the varicocele when he was sick first with malarial fever for five days. Had three such attacks. Veins nearly the entire length of the cord much dilated and tender on pressure. Operation by excision under chloroform anesthesia, September 5. Transverse suturing of the external wound to shorten the elongated scrotum.

Case 67.—James H. Hebel, age 21, Battery 3, Fourth Artillery, enlisted three and a half months ago. Purulent ophthalmia and perforative keratitis. On Saturday, August 27, he felt sensation of a foreign body in the right eye. The next day profuse purulent discharge. On examination August 31, the conjunctiva was found intensely swollen and vascular, discharge of pus profuse, eyelids swollen and edematous, pupil contracted; beginning of ulceration near the center of the cornea; beginning pannus, intense photophobia. There is no trace of gonorrheal infection. The treatment consisted of frequent cleansing with boracic acid solution and application of ice. Atropin could not be secured for three days. After that time it was used in sufficient strength to dilate the contracted pupil. In spite of all that could be done, the corneal ulcer perforated and the anterior chamber of the eye was partially evacuated. At this time the patient obtained a furlough and, on his own responsibility, undertook the journey to his home in Chicago. He was advised to place himself on his arrival under the care of Professor Hotz.

Case 68.—George Slate, age 24, civilian. Habitual dislocation of the left shoulder joint. This is the sixth time during the last two years the accident occurred. Patient probably under the influence of liquor when injured, as he does not

know how it happened. Became aware of the dislocation on waking up in the morning. Several contusions on other parts of the body were discovered. Dislocation of head of humerus downward and forward underneath coracoid process of the scapula. On request of the patient chloroform was administered, and the luxation reduced very easily by extension and rotation. The arm was immobilized by a Velpeau bandage. Accident September 15, reduction the following forenoon.

Case 69.—Peter Hansen, age 32, farrier, Troop L, First Cavalry, fell from stumbling horse September 15, in such a way that he struck the ground with his left shoulder. He has been unable to raise his arm since. Carries affected shoulder lower than the opposite one. Pain and circumscribed tenderness over the clavicle about an inch from the acromio-clavicular articulation. Patient somewhat obese, so that the distal side of the clavicle can not be readily traced. Fracture of the clavicle near the accromion process was diagnosticated, although no distinct displacement could be made out or crepitus elicited. Arm supported in a mitella.

Case 70.—Edward Consan, age 24, Troop I, Ninth Cavalry, colored. Enlisted four months ago. Admitted to the surgical ward September 7, with swelling and extreme tenderness of anterior surface of the left tibia. Previous diagnosis of osteomyelitis had been made. No history of injury. The swelling is most marked over the central portion of the shaft of the bone. The onset of the disease, the location and character of the swelling and the nocturnal exacerbations of the pain left no doubt as to the syphilitic nature of the periostitis. Inquiry develops a history of primary syphilis four years ago. Has had secondary eruptions and mucous plaques, etc., and at the present time there is hyperplasia of the lymphatic glands in all the principal accessible regions.

Rest in bed, elevation of limb, hot, moist, antiseptic compress and the internal use of potassic iodid in 15 grain doses, four times a day constituted the treatment that was directed. Under the iodid the pain and tenderness diminished, as well as the swelling. A few days after his admission a small fluctuating swelling could be felt in the center of the inflamed area, but as no pus was expected the use of the knife was refrained from. This superficial central softening is often seen in gummatous swellings and will disappear under the treatment the patient is receiving now. If absorption of the liquid contents of the fluctuating swelling does not take place, tapping and washing out with a 5 per cent. solution of carbolic acid will be resorted to.

Case 71.—L. J. Torney, age 24, Troop D, Sixth Cavalry, has been in the service two years and four months. Pressure paralysis of radial nerve. While in Cuba was in the hospital three days for chills and fever. He joined his command after his discharge from the hospital and was quite well for three weeks, when suddenly he became unconscious and was afterward wildly delirious and had to be tied to a litter for safe transportation. During this trip he lost the use of the extensor muscles of the right hand. The paralysis remains complete, otherwise the patient is in fair condition, although occasionally the temperature rises to 102 F. The patient is not confined to bed. The paralysis of the musculo spinal nerve was undoubtedly caused by pressure during the transportation on the litter. Massage and electricity were advised.

Case 72.—Thomas Clemens, age 21, recruit, Twenty fourth Infantry, enlisted two months ago. Hydrocele of the cord. Came to the surgical ward for diagnosis September 16. Six months ago, while in the act of lifting a heavy box, was taken rather suddenly with pain in the right side of the scrotum. In a few days a swelling developed, the size of a hazelnut, which has remained. The swelling is tender to the touch and is connected with the cord about an inch above the epididymis. The swelling is circumscribed and fluctuates distinctly. It was diagnosticated as a hydrocele of the cord.

APPENDICITIS.

It is somewhat astonishing that, in these days of appendicitis rage, of the many thousand soldiers who have landed at Montauk, not one case of appendicitis came under my notice that would have justified an operation. We would naturally expect that among such a large body of men, almost all of them at some time during the last five months the victim of intestinal affections, the appendix should have claimed its good share of disease. The climate, the diet, the previous intestinal affections contracted in Cuba, should have, according to our ideas of the nature of appendicitis, combined in exciting the disease. But such was not the case. The profession is well aware of the fact that surgeons who can see nothing else but appendicitis in cases in which the patients complain of pain in the right iliac fossa, have performed laparotomy, and these cases were not few in number, where as an excuse for their error in diagnosis, they have completed the operation by removing a normal appendix. Of the three cases of supposed appendicitis sent to the surgical ward, in only one the diagnosis proved correct, and this case was such a mild one that an operation was not deemed justifiable. One proved to be malaria, and the third typhoid fever.

Case 73.—Charles W. Dyer, age 19, Company K, Seventh Infantry, has been in the service only six weeks. He was taken sick September 11, and was transferred to the surgical ward three days later. The attack commenced with a chill and some fever, the following day pain in the right iliac region set in. Bowels constipated, no vomiting, loss of appetite. Had a similar attack a year ago, from which he recovered in a few days. On his admission to the surgical ward there was slight tenderness over the appendix and cecum, no tympanites and no palpable swelling or muscular rigidity, temperature only a degree above normal. Catarrhal appendicitis was diagnosticated, complicated probably by a similar condition of the cecum. Rest in bed, liquid diet and ounce doses of equal parts of castor oil and sweet oil, four hours apart, until the bowels move, constituted the treatment, under which the patient recovered in a few days.

Case 74.—James Reid, age 21, Company I, Seventh Infantry, has been in the service three months. Was admitted to the surgical ward September 1, with the diagnosis of appendicitis. The clinical history, as well as his condition at the time of admission, warranted a change in the diagnosis from appendicitis to typhoid fever. The temperature was erratic, showing malarial complication, but the curve from day to day showed the typhoid part to our satisfaction. The tongue was brown and dry with red tip and margins. Pulse 100 and temperature at that time varied from 101 to 105 F. Abdomen tympanitic and great tenderness in the right iliac fossa. Numerous rose spots appeared on the abdomen next day. Under appropriate treatment the fever subsided gradually at the end of the third week of his illness. The great tenderness in the right iliac fossa undoubtedly led originally to a wrong diagnosis, but it simply indicated in this case deep typhoid ulcers in the lower portion of the ileum.

Case 75.—Martin G. Norman, age 27, Seventh Infantry, Company C, enlisted three months ago. On leaving Santiago he began to feel bad with headache, anorexia and malaria; became worse; lost sleep and complained of pain in the stomach; most severe on left side under costal arch; bowels constipated, tongue large, flabby, with indented margin. Spleen markedly enlarged. At times has had pain in cecal region, which disappeared promptly after the administration of a laxative. Under quinin this patient improved rapidly.

STRICTURE OF THE URETHRA.

Case 76.—H. J. Ewing, age 54, Company A, Ninth Infantry, has been in the service twenty-eight years. Admitted to the surgical hospital September 12, and transferred the next day to a hospital in New York. Has suffered from stricture of the urethra for a number of years. Exploration with the olive pointed bougie reveals a small and tight stricture in the membranous portion of the urethra. The cause of the stricture is a fall upon the perineum he sustained in 1864. Denies venereal infection of any kind. Of late years he has had attacks of stoppage of the urine. The stream is small and micturition frequent. Patient transferred to New York for treatment.

Case 77.—Frank Hugh Banks, age 20, Ninth Cavalry, Troop D, enlisted three months ago. Has had several attacks of gonorrhea, the last, two months ago. The stricture for which he was admitted to the surgical ward September 1 involved the membranous portion of the urethra, was an old one and was much improved before he was transferred on the 8th to his command. By careful and prolonged attempts a No. 8 bougie passed the stricture. The treatment consisted of gradual dilatation.

Case 78.—T. C. Mark, age 23, Thirteenth Signal Corps, enlisted three months ago. Has stricture of the urethra dating back to gonorrhea two or more years ago. Examination made September 14 shows stricture half an inch back of the meatus A 14; another just in front of the scrotum admitting A 12. Gradual dilatation was commenced, but patient was transferred to a hospital in Boston two days later for further treatment.

The few cases of gonorrhea, syphilis and stricture observed in Camp Wikoff speak well for the morality of our army.

ADDITIONAL CASES OF FRACTURE.

Two cases of fracture of the long bones occurring in men belonging to the Cuban Army are of interest in showing impaired nutrition as one of the causes of delayed or non-union.

Case 79.—Hillyard H. Felder, age 44, packer, not enlisted. Five weeks ago, in Cuba, fell from a freight wagon; jumped to save himself and landed on his feet in a small hole, twisting his legs. He sustained a transverse fracture of the right tibia about an inch above the base of the inner malleolus, and a transverse fracture through the middle of the external malleolus. He came to the surgical ward September 14, the left limb in lateral splints, the right in plaster of Paris bandage. None of the fractures of the right leg have united, and there are no signs of formation of provisional callus. Fracture of left fibula united with some deformity. Patient is over six feet in height and very much emaciated. Plaster of Paris bandage renewed on right limb; no dressing for the left one. Operation for non-union of fracture of tibia advised as soon as the patient's general condition is improved.

Case 80.—John Coleman, age 28, Irish, stevedore, employed at the dock, Montauk harbor. Admitted during the afternoon September 12, to the surgical ward. While handling lumber was struck on right side of face by a crowbar handle set in motion by the slipping of a wrench. The accident occurred an hour before his admission to the hospital. The patient was unconscious and very restless. Right side of face swollen. Two small wounds had been sutured before he entered the hospital. Exophthalmos of right eye caused by retro-bulbar hemorrhage, divergent strabismus and dilatation of pupil, which does not respond to light. Free hemorrhage from mouth; no hemorrhage or serum discharge from either ear. Through the swollen part of the cheek the malar bone could be distinctly moved and crepitus was distinct. Pulse 60. No paralysis. Fracture of the malar and superior maxilla with extension of lines of fracture through the base of the skull was diagnosticated. On the second day the patient's condition was very much improved but toward evening a rapid rise in temperature led to a careful search for the cause of the fever. Professor Delafield was called into consultation and found a right lobar pneumonia. It is very probable that this complication will become the direct cause of death in the near future.

Since leaving the camp I have been informed by Dr. Greenleaf that the pneumonia terminated in a typic crisis at the usual time, and that the patient is recovering rapidly from the injury.

Case 81.—Charles Lubbas, age 44, German, engineer. Fracture of the clavicle. A week ago while at work as engineer on the *Vigilancia*, was struck on the right shoulder by a falling plank producing a fracture of the clavicle at the junction of the outer with the middle third. The fracture was oblique, the internal fragment displaced upward and forward and some overlapping. Reduction and Sayre Velpeau dressing. Patient was transferred the same day to New York.

ADDITIONAL CASES OF GUNSHOT INJURIES.

Case 82.—Peter Carr, aged 40, sergeant Company F, Sixteenth Infantry. In service 16 years and nine months. Was wounded July 2 before Santiago. He fell down at once on receipt of the injury, and on trying to arise found that the left leg was paralyzed both as to sensation and motion. He was carried to the First Division Hospital where the wound was dressed and he remained four days, thence to Siboney where he staid three days before being taken on board Hospital Ship *Relief*. He was landed from the *Relief* at Governor's Island, has had a furlough of thirty days and on Sept. 16 reported for duty at Camp Wikoff, entering the surgical hospital Sept. 18. Examination shows a vigorous looking man with partial paralysis of left leg. There is a scar on the left side of the back 2½ inches from the median line and on a level with the second lumbar vertebra. This marks wound of entrance of the ball, there is no wound of exit. The patient says the wound healed very promptly with only slight discharge; further that four weeks elapsed before he could rest any weight upon the leg, but he has been improving ever since and can now walk with a cane. There is marked wasting of the extensor muscles of the left thigh and marked impairment of sensation of the left foot and leg. He says that occasionally the leg gives way in walking, especially if the toe strikes something above the level of the ground. He can not raise it when flexed and states that with much walking the knee swells. There has been no impairment of function of bowels or bladder and no priapism.

In this case the ball probably passed transversely producing contusion of the cord and bruising the roots of the spinal nerves very near their origin; it is probably lodged where it will do no further harm. The man says the X-ray was used twice but the result of examination was not reported to him.

Case 83.—B. F. Frazier, age 24, Company B, Twenty fourth Infantry, has been in the service eleven months. While in action July 1, before Santiago, he received a wound of the right hand, the bullet entering the web between the index finger and thumb, passing through the ball of the thumb and making its exit at the base of the adductors over the anterior row of carpal bones. No bone injury. The wound was packed with gauze. The wound of exit healed in two weeks, the wound of entrance has never closed completely and has discharged from time to time a small quantity of serous pus. The patient was admitted to the hospital ward July 15. Examination with the probe revealed the presence of a small metallic body. During the preparation of the hand for operation a small triangular fragment of metal was washed out of the fistulous opening. Under anesthesia next day the wound was again explored and the probe passed to a point underneath the scar of the wound of exit, detected another piece of metal which was removed by incising the scar, when a fragment of lead much larger than the first was extracted. On scraping out the fistulous tract with a small sharp spoon shreds of gauze were removed. The bullet that inflicted the injury must have been a deflected one, as otherwise no fragments of lead would have been left in the wound. The gauze undoubtedly belonged to the packing used at the first-aid dressing. The wound was dressed in the usual manner; no provision for drainage was made, with the expectation that it would heal speedily by primary intention.

Case 84.—John Marks, age 22, Troop D, Sixth Cavalry, enlisted five months ago. He was wounded in the charge on San Juan Hill, July 1. The bullet cut the edge of the upper posterior edge of the right ear, entered the scalp one inch above and one and a half inches behind the right external meatus, and emerged from the scalp three inches in a direct line from point of entrance, probably making a superficial groove in the external surface of the occipital bone. The patient says he was taken to Key West while in an unconscious condition, in which he remained two days. July 6 he was operated on, the wound being laid bare by a curved incision and a small piece of bone is said to have been removed. The wound healed in a month. Scars healthy and not sensitive to pressure. He complains now of attacks of throbbing pains from back of head to eyes, three or four times a week; the attacks last sometimes half an hour. He does not complain of vertigo or disturbance of any of the special senses. Whether the symptoms are purely of a neurotic nature or whether they depend on the injury must be determined by future observation. Potassic bromid was prescribed.

From the above report I have excluded minor cases that were treated as out-door patients or inmates of the surgical ward not of sufficient interest to have any material bearing on the subject of this paper. This communication has been written for the special purpose of pointing out to the profession, and more especially to the military surgeons, the nature and sphere of surgical work in field hospitals at the end of a war. This completes my surgical work of this war, and I return to civil life grateful to the authorities and my colleagues for the kindness and many courtesies I have received at their hands.

General Hospital, Camp Wikoff, Sept. 17, 1898.

THE KRAG-JORGENSEN BULLET-WOUND.

BY LIEUT.-COL. VALERY HAVARD.
CHIEF SURGEON U. S. VOLUNTEERS.
BRIDGEPORT, CONN.

At my request, Dr Mariano Ojuna, surgeon in chief of the military hospital at Santiago de Cuba, kindly sent me, on Aug. 19, 1898, some notes which I offer as a small but interesting contribution to a very important subject. Dr. Ojuna regretted his inability to prepare a more elaborate report, being at the time exceedingly busy in superintending the transfer of the sick and wounded to the Spanish transports. But first a few preliminary remarks.

He states that 541 wounded—43 officers and 498 men came into the military hospital for treatment. Of the killed he makes no mention. As this hospital was the only available one, we may infer that all the wounded really *hors de combat* were admitted to it.

On the other hand, according to the official Spanish report, the casualties were as follow: Killed, officers 17, men 107; wounded, officers 59, men 556; missing, officers 7, men 116.

As this report includes the few navy casualities which occurred before the destruction of Cervera's fleet, and likewise accounts for a certain number of slightly wounded men who never entered the hospital, the discrepancy between it and Dr. Ojuna's figures is sufficiently explained. We may note, incidentally, that the above statistics show a proportion of casualties of about 10 per cent.—1.7 killed and 8.3 wounded. On our side, the total casualties at San Juan Hill were about 13 per cent.—1.86 killed and 11.14 wounded. The ratio of killed to the whole number struck was one-fifth among Spanish, and one-seventh among American troops.

In order to justly appreciate the results described by Dr. Ojuna, it should be remarked that the hospital where all these cases were treated is an old building without adequate water-supply and without sewerage, the excreta being emptied into a large pit; it was also at that time crowded to two or three times its normal capacity: in a word, it appeared beyond the possibility of good sanitation. To this we may add that proper food and several important medicines were scant and became entirely exhausted. Dr. Ojuna's notes, freely translated, are as follow:

". . . Since the beginning of hostilities, 45 wounded officers were admitted to this hospital; 26 have been discharged cured and 7 died; of the others, only 2 were serious cases: one with comminuted fracture of the left tibia, already united and nearly well, the other with fracture of the same bone but loss of over a centimeter of substance nearly throughout its thickness; in this case a cure is also expected, in time.

"All these wounded, with hardly an exception, never had any fever. They were mostly treated with solution of corrosive sublimate, iodoform, iodoform gauze and absorbent cotton; that is, with antiseptic dressing, changed only every two or three days according to indications. There were fractures of various bones, such as humerus, ulna, radius and those of the carpus, tarsus and metatarsus, but I did not observe a single case of arthritis, nor the slightest complication. As an interesting fact, worth special mention, I did not have to perform a single amputation among all the wounded officers.

"Of the seven who died, two had the skull fractured by fragments of shell, with protrusion of brain matter, while the other five succumbed to internal hemorrhage or peritonitis.

"Of the wounded soldiers, 498 were admitted; 34 died of purulent infection, tetanus, internal hemorrhage and severe wounds of the skull and brain, the latter causing the greater part of this mortality. There now remain only 47 cases which will require ambulance transport to the ship.

"The parts involved were mostly the extremities, inferior and superior, much more rarely the chest, head and abdomen. Very many cases were of great gravity, but thanks to the treatment pursued, the skill of the surgeons and the sanitary care of the attendants, all dangerous symptoms subsided in a few days and the cure followed a normal course, the wounds remaining completely aseptic. Here also the striking fact must be stated that not a single amputation was required or performed, a result speaking high praise for the conservative surgery always advocated by Spanish surgeons, as well as for the treatment followed.

"As a general rule, the bullet passed through the body or limb, making two clean holes, those of entrance and of exit. Some wounds had no hole of exit, but in most of them the bullet lodged near the skin and was easily extracted.[1]

"In the case of an officer, the bullet ranged through the face: the hole of entrance was very small and otherwise normal, but that of exit was much larger, with irregular, ragged edges, burnt and discolored by grains of powder; there was much destruction of tissue and healing was very slow. I believe this case was produced by an explosive bullet, such as the insurgents had frequently used before, and that an insurgent was the author of this outrage against the laws of war. Never did the thought enter my mind that it could be imputed to our loyal enemy, the Americans. . . .

"The average time required for the healing of the great majority of our wounded was from 20 to 25 days, even of those most gravely hurt; penetrating wounds of abdomen and chest recovered in a proportion of 70 per cent. with amazing rapidity, without leaving any complications. . . . "

These notes, incomplete as they are, corroborate the observations made among our own wounded of the effects of the Spanish Mauser bullet, and justify us in formulating the following conclusions:

1. The rapid-firing, long-range modern rifle, with small steel-jacketed bullet, does not produce a larger percentage of casualties than the weapons used in our Civil War or the Franco-Prussian War.

2. The proportion of killed to the wounded is less than before.

3. Wounds heal with astonishing rapidity, even a majority of those penetrating the abdomen and chest, so fewer deaths occur in field hospitals.

4. Few, if any, primary operations are now performed, and amputations (except as a result of artillery fire) are hardly ever required.

In view of the unsanitary state of the Spanish hospital, and the, perhaps excessive, conservative attitude of the surgeons, the results obtained are certainly very remarkable, and show what, despite adverse conditions, we may expect from an aseptic bullet, rest and antiseptic treatment. These results are, on the whole, better than those obtained on our own side, and the reason must be the necessary and often rough transport to which our wounded were subjected, first from the front to the field hospital, then from the hospital to the sea-shore, from the beach to the hospital ship, and so on, until they reached their final home destination.

SOCIETY PROCEEDINGS.

Association of American Medical Colleges.

SECRETARY'S OFFICE, 104 E. 40TH ST., CHICAGO,
November 26, 1898.

The Association has published its proceedings and already distributed them, six copies to each college holding membership, one copy to every other medical college in the United States and Canada, two copies to every State board of health, and a bound copy to every medical library or large general

[1] On our side, the proportion of bullets remaining lodged in the body was one-fifth or one-sixth, an unexpected and surprising fact.—V. H.

library in the world. Additional copies will be mailed to proper officers and persons on request.

The Judicial Council has recommended to membership the University of North Carolina, and the Medical Department of Kentucky University.

The Secretary has written a large number of medical men requesting co-operation in bringing the action of the AMERICAN MEDICAL ASSOCIATION, in relation to the four years' course, to the notice of local societies with which they are connected. Many encouraging replies have been received.

A large number of three-year schools have signified their intention to make their course conform to the requirements of the ASSOCIATION at their next commencement. Some schools, however, persist in maintaining a shorter course in spite of the action of the AMERICAN MEDICAL ASSOCIATION and the rulings of various State Boards of Medical Examiners.

The Secretary has prepared a very complete bibliography of the Association, which will be published in January.

The following rulings of the Judicial Council are of such importance that they are published herewith:

JEFFERSON MEDICAL COLLEGE—DEAN'S OFFICE,
PHILADELPHIA, PA., Nov. 10, 1898.

DUDLEY S. REYNOLDS, M.D., Chairman Judicial Council Association of American Medical Colleges.

Dear Sir:—I beg to present to the Council a case for their judgment. In our annual circular the attached paragraph appears.

TO ADVANCED STANDING.

College graduates in Arts or Science, who during their college course have devoted the stated number of hours to the study of the following branches or their equivalents—General Biology, 90 hours; Mammalian Anatomy, 144 hours; Chemistry, 216 hours; Physics, 72 hours; Histology, 72 hours; Human Anatomy, 144 hours; Physiology, 48 hours; Zoölogy, 96 hours; Embryology, 72 hours—are admitted to the second year without an entrance examination. During this first year they must take Materia Medica and Pharmacy (including the laboratory work), and at the end of the year be examined in them. At the end of the second year they must also have completed the dissection of the entire human body and be examined in the entire subjects of Anatomy and Physiology. They have the option of taking first-year Anatomy and Physiology at the end of their first year in this Institution, and their second-year Anatomy and Physiology at the end of their second year. There will be no charge for dissections in their second year.

A student has applied to us for advanced standing to our fourth year graduating class, with the following history: He was for two years in the *medical preparatory* department of the Ohio *State* University, and did work in excess of that required in the above paragraph. This work was considered by the Ohio *Medical* University fully equivalent to their first year and he was advanced to the sophomore year. He remained in the Ohio Medical University through the sophomore and junior years, passing all his examinations, and now seeks to become a member of our graduating class.

The only point against him is that his medical preparatory course did not lead to any degree, either B.S. or M.D. At the Denver meeting the following amendment was adopted: "A college not giving the whole four courses of the medical curriculum and not graduating students, but otherwise eligible, may be admitted to membership." This recognizes the value of *work done* in a systematic college course apart from the degree. We have been asked to recognize the systematic work done by students in the Ohio State University and the West Virginia State University while taking the medical preparatory course. We find that certain colleges, members of the Association, who have informed themselves as to the nature of this medical preparatory work, have advanced the "medical preparatory" student one year in his medical course for the two years of the medical preparatory. They say that the students are well instructed, and assert their belief in the propriety of their action in spite of the fact that the "medical preparatory" course does not lead to the degree A.B., B.S. or M.D. I ask your ruling on the question. Is it permissible to recognize the two years of *medical preparatory* work in certain universities as equivalent in time to the first year of the medical curriculum? An early answer will greatly oblige.

Yours very respectfully,
[Signed] J. W. HOLLAND, Dean.

LOUISVILLE, KY., Nov. 16, 1898.

Dear Doctor:—Please read carefully the enclosed copy of Professor Holland's letter, and the accompanying opinion. If the latter meets your approval, please to sign it and return it to me as soon as possible. If not, please prepare an opinion in accordance with your judgment, on a separate sheet of paper, and forward it to me as soon as possible.

Very truly yours,
[Signed] DUDLEY S. REYNOLDS, Chairman.
(Exact copy of original sent to each member of the Council.)

ANSWER TO THE LETTER OF PROF. JAMES W. HOLLAND, M.D., DEAN OF THE JEFFERSON MEDICAL COLLEGE, PHILADELPHIA, PA., OF NOV. 10, 1898.

It is the opinion of the Council that, the Constitution of the Association of American Medical Colleges does not contemplate all the circumstances which may arise in relation to claims for advanced standing, based on previous collegiate training received in regular and systematic order.

Section 4 of Article III, of the Constitution authorizes the Jefferson Medical College to recognize the credentials issued by the Ohio Medical University. The student referred to by Professor Holland seems to have complied sufficiently with the requirements of the Constitution to entitle him to the advanced standing accorded him, provided it can be shown he possessed the preliminary education exacted in Sections 1 and 2 of Article III of the Constitution.

The Council does not presume to say what recognition should be given to the work done by students in the Ohio State University, nor the West Virginia State University, in their preparatory medical courses. Deans must be allowed some discretion in individual cases not specifically provided for in our Constitution.

It is the opinion of the Council, that it is permissible to recognize the two years of medical preparatory work in certain universities as equivalent in time to the first year of the medical curriculum; provided, however, that the applicant exhibits the required preliminary education and passes the standard intermediate examination for admission to the second-year course.

[Signed] DUDLEY S. REYNOLDS,
STARLING LOVING,
RUDOLPH WINSLOW,
ALBERT R. BAKER,
JAMES H. ETHERIDGE,
JOHN B. ROBERTS,
VICTOR C. VAUGHAN (failed to report).

HIRAM CHEISTOPHER, M.D., Dean, St. Joseph, Mo.:

Dear Doctor:—Your letter of October 29, addressed to Prof. Bayard Holmes of Chicago, has been referred to me for definite answer.

The Association of American Medical Colleges, as you know, was permanently organized at Washington in 1891, in accordance with resolutions adopted by a convention of medical teachers at Nashville, in May, 1890. At the time of the first organization, the Association pledged itself to observe certain requirements, including three courses of graded instruction of not less than six months each, in three separate years, of all candidates for the degree of Doctor of Medicine. In 1894 the Association adopted, to take effect in 1899, and thereafter, four courses of not less than six months each, in four separate years. This action has been so widely published that it could not have escaped the attention of any person in the regular profession of medicine.

In annual session, at Detroit in 1892, the AMERICAN MEDICAL ASSOCIATION resolved unanimously to demand of all colleges in the United States, the adoption and observance of a standard of requirement which should in no case fall below the minimum standards of the Association of American Medical Colleges. In June, 1898, at Denver, after mature consideration, the AMERICAN MEDICAL ASSOCIATION adopted an ordinance making good its demand of 1892 by amending Article IX of the By-Laws, by defining in defiuite language certain conditions, which shall hereafter exclude from representation in that body.

From your language to Professor Holmes, it is clear you are familiar with that action. There is no probability of any person familiar with the Constitution, the By-Laws and the Ordinances of the AMERICAN MEDICAL ASSOCIATION, being persuaded that the action at Denver was in any sense irregular or in conflict with the Constitution. In the second Article of the Constitution of the AMERICAN MEDICAL ASSOCIATION, under the heading of "Permanent Members," it is specified that, compliance with the By Laws of the ASSOCIATION shall be exacted. At page 15, Article IX of the By Laws contains a statement of conditions excluding representation. The action at Denver merely extends these conditions to include conduct, of which no one at that time, nor have they yet at this time been guilty.

If, with the warning of that action before you, you feel able to defy the action of the AMERICAN MEDICAL ASSOCATION, I am

sure you will not find fault with the College Association, nor with the AMERICAN MEDICAL ASSOCIATION, both of which are limited in the application of their rules and regulations to their own membership.

I should not like to see your institution assume this defiant attitude, and I trust you will recede before it is too late. Trusting you may see the advantages to accrue to your school in adopting the minimum standard of requirements of both the College Association and the AMERICAN MEDICAL ASSOCIATION, and that you will be spared the humiliation of being denied recognition by the only organized body of the profession authorized to speak with authority in the United States. I am, very respectfully, your obedient servant,

[Signed] DUDLEY S. REYNOLDS, Chairman.

LOUISVILLE, KY., Nov. 10, 1898.

PROF. JOHN ROGERS, JR., New York, N. Y.

Dear Sir:—Your communication of October 29, addressed to Prof. Bayard Holmes of Chicago, has been referred to me for definite reply.

The Association of American Medical Colleges adopted, in 1894, an amendment to Article III of the Constitution, providing that all candidates for the degree of Doctor of Medicine in 1899 and thereafter, shall have attended four courses of instruction, of not less than six months each, in four separate years. This has been widely published in the medical press, and it has been the subject of judicial determination on several occasions: the Council holding that the language, "in 1899 and thereafter," must be construed to mean from Jan. 1, 1899. With this interpretation repeatedly published, and unanimously confirmed by the vote of the College Association in annual assembly, the AMERICAN MEDICAL ASSOCIATION last June, at Denver, unanimously resolved to support it and deny recognition to any person concerned in preparing students for the degree, as well as those receiving such degree, after Jan. 1, 1899, on conditions below the requirements of our Association.

On examining your announcement for 1898-99, I find at page 18, your college proposes to graduate the class of 1899 on three courses. I very much regret that you have lowered the standard of requirements, and that your institution proposes to await the operation of the statutory requirements of the State of New York. I am sure that your institution would gain greatly by adopting our minimum standard of requirements, and I trust that it is not too late for you to recede from the unfortunate position which you have taken, as you say, "for the benefit of a few men who registered with the old University of the City of New York." We could not admit to membership an institution that openly proposes to violate our minimum standard of requirement. Trusting you may be able to correct this, and that I may yet have the pleasure of recommending your institution for membership in the Association, I am, very respectfully yours,

[Signed] DUDLEY S. REYNOLDS, Chairman.

Chicago Society of Internal Medicine.

Meeting of Nov. 22, 1898.

Dr. JOHN A. ROBISON, president of the society occupied the chair.

Dr. HENRY F. LEWIS read a paper on

MUSICAL HEART MURMURS.

He said in part: Musical murmurs heard over some parts of the heart's area, in various abnormal cardiac conditions, are not uncommon phenomena. They are often due to aberrant tendinous cords stretched across the cavity of the ventricle in such manner that they are tightened by the movements of the ventricular walls and caused to vibrate by the of the current of blood rushing against them. In order that such a cord shall act like a harp string and give forth a musical vibration, it is necessary that it lie directly in the course of the stream of blood, and that there be a vigorous action of the ventricle. The musical murmur in these instances is commonly accompanied by a vibratory thrill. In a recent article in the *Philadelphia Medical Journal* the author considers somewhat at length the influence of aberrant tendinous cords upon the production of these musical murmurs. While cases are not uncommon where such cords are found in other cavities of the heart, he believes only one has been recorded where a musical murmur was produced by a cord stretched across any chamber other than the left ventricle. It is necessary also that the cord be across the aorta or upper third of the ventricle; otherwise no musical sound is produced. Eichhorst states that a musical bruit may be caused by a congenital aberrant cord running from the ventricle to the aortic wall.

Disease of the aortic valve or its neighborhood is a frequent cause of musical murmurs. Many times the sound is loud enough to be audible at a distance from the chest, even enough to disturb the patient himself. Very loud murmurs usually mean aortic disease. McAldowie reports a case where the sound was easily heard several feet away from the patient. The autopsy revealed a lacerated flap from the degenerated wall of one of the sinuses of Valsalva, which in life probably projected into the blood-stream and gave rise to the systolic "cooing" sound observed clinically. In the case of tendinous cords across the upper part of the ventricle there may be in addition to the systolic bruit or without it, a diastolic musical murmur caused by the regurgitant stream coming back into the ventricle. In relative insufficiency of the aorta there may be dilatation of the ascending portion of the vessel which can cause a musical note heard with diastole.

Huchard maintains that aortic regurgitation due to arteriosclerosis is more commonly accompanied by musical, rough or whistling murmurs than is that lesion due to other causes. Arteriosclerosis is the most frequent cause of aortic stenosis and the murmur with that lesion is often whistling or otherwise of a musical character. While musical sounds are oftenest heard in the aortic region and due to lesion of the corresponding valve, yet sometimes mitral disease may be the causative factor. In mitral stenosis such a murmur may exist with diastole or modifying the presystolic bruit characteristic of that disease. Cases are not unknown where a distinct or even very loud musical sound existed for some time and then disappeared. Such might be caused by vegetations on the aortic valve, which were finally swept away by the blood. Musical murmurs heard in the cardiac region may owe their origin to extracardiac causes. Catarrh of the bronchioles of the adjacent parts of the lung, especially the lingual appendix, may give rise to a musical sound from the beating of the heart next to it. A metallic tinkle may come from the cardiac movements setting up a vibration of the walls of the chest.

Dr. LEWIS reported a case of heart disease characterized by a musical murmur heard about the apex and at the end of diastole. He had made the diagnosis of mitral stenosis.

Mrs. G., aged 45 years, married, never pregnant, native of Ireland, had an attack of acute articular rheumatism fifteen years ago. These attacks recurred from time to time for two years, and then disappeared until two years ago. At this time she had an attack of cardiac failure somewhat similar to the recent one for which he treated her. There was great bodily weakness, feeble pulse, marked dyspnea, orthopnea and obstinate vomiting. She went to a hospital and lay in a state of coma for three weeks. Then consciousness returned and anasarca supervened to a marked degree. At the end of six weeks she left the hospital much improved. Since then she has suffered great dyspnea on exertion, but has managed to do her housework until the present illness came on. Several weeks before his first visit she was seized with constant dyspnea, inability to recline, anorexia and obstinate vomiting, rejecting everything from the stomach for five days before he saw her. His first notes are dated March 21, 1898. He found her half-reclining in bed, gasping, with a shallow respiration at a rate of over forty to the minute. The pulse was so weak and irregular that it could not be counted at the wrist. There was much cyanosis and jaundice with considerable emaciation. There was very little edema at that time, but it increased later. The hands and feet were cold and clammy; she sweat profusely from the exertion of whispering; complained of great pain in a small area in the lumbar back. In short, he found her moribund and advised sending for a priest. The heart beat at the apex was very irregular in time and intensity, counting about 150 per minute. The rapidity of pulse, as well as the rapid and noisy breathing, obscured the auscultation, but he was able to make out a not very loud systolic murmur at the apex. Her condition forbade an extended examination and he made a provisional diagnosis of mitral insufficiency with muscular degeneration and passive congestion of the abdominal viscera. The scanty urine was of high color, specific gravity 1028, showed a little bile pigment and a trace of albumin. In the sediment were hyaline and granular casts stained yellow, a few leucocytes and renal and cystic epithelial cells. He prescribed digatalin (gr. $\frac{1}{100}$) every four hours and a diet of liquid peptonoids. Two days later there was little change, except that the pulse was a trifle stronger and the respirations less difficult and rapid. She had been able to retain half an ounce of the peptonoids every two hours, but nothing else, not even water. He replaced digitalin by strophanthus and aromatic spirits of ammonia. Three days more found her pulse reduced to 70 without intermission, but not regular in force. All the symptoms steadily ameliorated. She was able gradually to add peptonized milk, eggs and other light food in the course of a few weeks. Moderate edema of the legs came on. He prescribed

strophanthus, diuretin and a little digitalis from time to time. The urine became less scanty and concentrated; albumin disappeared, and casts diminished in number. Early in June examination showed albumin and sugar absent; urea 50 grams per diem; uric acid increased; phosphates 1.5 per cent. and sediment free from casts. Edema was never great. June 1, auscultation showed a slight souffle at the apex, heard with systole, and propagated a little toward the axilla. He also heard then, for the first time, a rather low-pitched musical sound with diastole. This sound covered a considerable area about the apex. Cardiac dulness extended one inch to the right of the sternum and half an inch to the left of the nipple line.

The patient's general condition has continued to improve a little, from week to week, until she has become able to go downstairs, out of doors, and even several miles away from home without unpleasant symptoms. Early in June she had several attacks of partial faintness, accompanied by amaurosis lasting several minutes, but these symptoms have since disappeared. Ophthalmoscopic examination shows a dimness and cloudiness of the disc of each eye and a congestion of the vessels. In the right eye there is a considerable tortuosity of the vessels. Examination October 7 showed the musical sound still present, but weaker, and a complete disappearance of the systolic souffle at the apex. The pulse was rather rapid and not perfectly regular in force; the area of cardiac dulness not perceptibly increased, nor was that of the liver. Pulmonary signs are *nil*. There was a slight accentuation of the second pulmonic sound, and the patient complained of some dimness of vision in the left eye with scintillation of light before it. The left pupil was slightly larger than the right, but both eacted to light. There was little or no edema; the urine passed freely and was negative in character.

As to diagnosis, the essayist is inclined to think that the present condition is one of sclerosis or calcareous condition of the mitral valve, causing the musical murmur heard at the end of diastole in the region of the apex. He thinks the cause of the earlier severe symptoms was a dilatation of the right ventricle and then the left, giving rise to a relative insufficiency of the mitral, as evidenced by the systolic souffle which, as the ventricular dilatation has subsided, has since disappeared. At the same time, he recognizes the probability of there still being more or less leakage through the deformed mitral valve.

Another case of musical murmur under his observation at the present time, he reports very briefly. The patient, Miss G., 40 years of age, of nervous and gouty antecedents, has suffered from frequent attacks of palpitation for the past year or more, which later became more frequent and distressing. Recently she complained of feeling a lump in her throat, and at times of a sense of suffocation. Examination showed a slight enlargement of the thyroid, tremor, pulse-rate varying between 80 and 120; no signs of exophthalmos. A high-pitched musical murmur was heard with diastole over the right carotid as far up as the angle of the jaw, and for a short distance along the course of the right subclavian. The pulmonic sound was slightly accentuated: the second sound at the apex doubled, and there was a systolic souffle heard at the apex, not propagated. Desiccated thyroids increased the palpitation and the sense of suffocation, but the thyroid gland has not enlarged. The nervousness and palpitation were modified somewhat by bromids and digitalin; but the condition has been little changed for the last month or two. The blood examination showed 4,500,000 red-blood corpuscles to the millimeter, a normal amount of hemoglobin, and no apparent change in the morphologic aspects of the blood. The musical murmur is diminishing in intensity.

A somewhat similar case of arterial musical murmur in Graves' disease is reported by Forte and Penne. In their case the sound was so intense as to interfere with the patient's sleep. The maximum intensity was over the aortic region and the sound was propagated into the arteries, especially of the right side. In Graves' disease the cause of the musical murmur is not necessarily a cardiac lesion, but may be due to nervous disturbance of the contractility of the heart resulting from the general disease.

Dr. ROBERT H. BABCOCK—The paper has covered the essential points of interest so thoroughly that it leaves very little room for further discussion except by way of amplification of the subject. I am not disposed to take the time of the Society in discussing the causation of the musical murmur, but it unquestionably is due to some condition which favors the vibration of some solid material, a valve, an arterial wall or a calcareous plate, an aberrant cord, or what not. For years I have heard musical murmurs, from time to time, but they have always been systolic, so far as I now recall, with one exception. Something like two years ago I chanced upon a dispensary patient who had a diastolic musical murmur. In this case there was aortic insufficiency. The murmur was loud enough to annoy the patient and could be heard at some distance from the body. It was intermittent. It ultimately disappeared before the patient's death, and at the postmortem examination, which was made by Dr. Sippy and Dr. Evans, no satisfactory condition was found which could explain the production of the musical murmur. An aortic lesion was fully established and was due to arteriosclerosis. Recently, I have seen two cases of aberrent cords, and both cases have come under my observation since Dr. Lewis's paper of last winter. One, a female, I had examined a number of times, and had never detected a musical murmur. On one occasion she became violently excited; the heart's action was exceedingly rapid, 160 or more, and there was developed, while I was auscultating, the most exquisite musical murmur I have ever heard, which seemed to me as nearly like the twanging of a violin string or a bow chord as any thing I could think of. As the heart quieted down the murmur disappeared. These murmurs are of great interest, but are rarely of special diagnostic import. They may help us to understand the pathologic condition in a measure, and yet I do not think our knowledge of the conditions which call forth musical murmurs is such that we can always predicate with anything like accuracy the exact condition which gives rise to the musical quality of the murmur. The disappearance of the murmur in my case was due to cardiac enfeeblement.

Dr. JAMES B. HERRICK—Occasionally, the louder the murmur and the more distinct the musical quality, the better the prognosis. As I listened to Dr. Lewis's report of the case, I wondered whether in this instance, when the patient was first observed, on account of myocardial weakness the blood currents were so feeble that they did not give rise to a musical murmur. Perhaps the condition of the patient today would throw some light on that point. As the patient's murmur has again disappeared, it may be that, at the same time, the heart muscle has once more become weak. As Dr. Babcock has said, from a diagnostic standpoint these musical murmurs are, perhaps, as Flint terms them, "mere clinical curiosities." And yet from a careful study of clinical cases and from postmortem observations, we may at some time be able to make certain definite statements concerning the lesion that exists from the character of the murmur, and such papers as that of Dr. Lewis are extremely valuable as helping to get together the histories of a great many of these cases. Laennec, as Dr. Lewis has said, laid a good deal of stress upon the musical character of murmurs. I believe, in his original edition, he even represented them by musical characters showing their exact pitch. His more practical English translator (Forbes) quietly cut out a good deal of his discussion as to the musical character of murmurs; and Latham, one of those clear headed English writers, in the early part of this century, said that the musical or other quality of the murmurs was of little practical value, though when auscultation was first introduced in England and physicians began to listen to the heart, they were not only captivated by the sounds they heard and by the whole study of auscultation, but they made it considerable of an amusement, and tried to see how nearly they could compare the murmurs to various other sounds, and he says that they even went so far as to represent them by musical notes.

Dr. BABCOCK—Was it not Latham who reported a case in which a musical sound was heard like that of the cuckoo cooing, and yet nothing was found postmortem to explain it?

Dr. HERRICK—I do not remember. Speaking of diastolic muscal murmurs, the loudest musical murmur I ever heard was diastolic and in a case of typic aortic regurgitation.

Dr. LEWIS (closing the discussion)—In answer to Dr. Herrick, I think he is right in regard to the condition of the musical murmur in my case. It is a fact that the murmur was not heard while the heart muscle was in a very weak condition at the same time that the heart must have been dilated, at which time there was a loud systolic murmur. I spoke of the difficulty of examining in her weak condition and said that the respiratory sounds were much disordered. Before this time, in the hospital they had discovered a cooing sound, as of a bird in the chest. Since the murmur has begun to disappear again, she is improving, and the heart muscle seems to be stronger.

Dr. CHARLES W. PURDY read a paper entitled

THE PRINCIPLES OF THE DIETETIC TREATMENT OF DIABETES MELLITUS (*vide* JOURNAL, December 3, p. 1329).

Dr. N. S. DAVIS—I have not for a long time listened to the reading of a paper that was to me more interesting and instructive than the one just heard. It reflects the thought of the best students of this subject today. I think the pendulum of medical opinion has swung completely away from the belief

that was so prevalent some time ago, that diabetic patients must be excluded entirely. The prevalent opinion now, at least among those who are studying diabetes most carefully, is that a modicum of carbohydrate foods can be allowed to most patients. The exact quantity must be determined for each patient experimentally and by careful tests of the digestive capacity of each patient. As Dr. Purdy has said, the quantity which each patient can tolerate varies during the course of each one's illness; therefore, a constant watch of the digestive powers of each must be kept. There is a time, it seems to me, when we can place patients upon a strict diabetic diet, as it was formerly called; it is when they first come under treatment. All carbohydrates should then be forbidden in order that we may learn whether we can thus prevent the elimination of sugar by the kidneys. If the latter can be made to disappear, then one can carefully administer small and increasing quantities of starchy food to ascertain how much will be assimilated. Under these circumstances a strict diabetic diet, or one from which carbohydrates have been excluded, is useful, but only for a short time. Again, oftentimes when diabetic coma, or nervous symptoms which lead us to suspect its onset, threatens, patients can advantageously be placed upon a strictly diabetic diet. There are, however, a group of cases that, under the same circumstances, suffer from indigestion, which often seems to have been produced by crowding albuminous and fatty foods to the exclusion of carbohydrates; such patients are frequently benefited by permitting a mixed diet for a little time, that is, throwing aside the dietetic barriers that have been erected. Immediate improvement is not uncommon under such circumstances. It has seemed to me, from some experience, that it is not desirable to place patients upon a closely restricted diet suddenly when they first come under treatment. Patients do better if one at first inquires carefully as to what foods they have been using, and if one article of food is eliminated after the other until they are day by day gotten upon a sufficiently restricted diet. In many cases that I have seen indigestion has been common by suddenly restricting diet, and the patients felt worse rather than better. In at least two instances in which coma developed and proved fatal, it seemed to be precipitated by the sudden change of diet. At least, this was the impression made upon me. Two or three cases are not enough, however, to generalize from. It seem desirable to put patients very gradually upon a restricted diet if they are to be placed upon it at all.

I was extremely pleased with Dr. Purdy's opening remarks as to the necessity of forming a compact, and cast iron agreement, between patient and physician, in order to successfully treat cases of diabetes. Patients in advanced life can be most successfully treated, provided only they are constantly under a physician's guidance. Examinations of the urine must be made frequently. One must have a complete knowledge of the character and quantity of foods patients are taking, and he must look to even the minutest details of hygienic treatment, both dietetic and otherwise, in order to insure success in the treatment of these cases. Frequent examinations of the urine are absolutely essential. The first symptom of relapse or recurrence in patients who have been helped must be looked for in order to properly adjust their diet to their varying needs. This watch must be maintained continuously over years of time, in some cases. In regard to individual articles of diet, the diet lists which I have been in the habit of prescribing are not very different from those Dr. Purdy recommends. I have not added the use of fats as frequently as I wish I had until the last year and a half. I believe that I get better results by giving fats more generously than I used to do. There is, however, chiefly the danger when patients are put upon a fat and albuminous diet, of creating digestive disorders. It is very difficult in some cases to get enough of fats taken to accomplish good. It is best to permit the use of so much of carbohydrates as experience shows are assimilable and to substitute fats for them when none or little can be taken.

Dr. JOHN H. HOLLISTER—For many, many years I have had occasion to watch the progress of cases of diabetes, and I have formulated some conclusions in my own mind which occur to me at the present time. In the first place diabetes is perhaps one of the most interesting diseases for clinical study on the part of the attending physician, and one of the most fruitful that can claim our consideration. The subject-matter of the paper is proof. It involves the whole subject of nutrition; it involves the molecular changes which are incident to tissue-building and the removal of excrementitious matter: it involves processes in which the structure and function of the kidney is inseparably related. This leads me to the thought that we have such a great variety of conditions that the cases must be treated individually. As has been remarked, we need to study each individual case more critically than in almost any other disease, and if this can not be done we can not lay down any specific line of treatment that shall be applicable in any large number of cases. My experience has led me to the conclusion that there are few persons, except under hospital control, who are satisfactory patients. It has occurred to me, and to all of you doubtless, that most of those who suffer from glycosuria are in conditions of health where they like to care for themselves, and very frequently are scarcely amenable to control. The frequent indiscretions of my patients have led to discouragement on my part with reference to the treatment of this disease. As Dr. Davis has said, nothing but a cast-iron rule can avail, and only those under absolute hospital control seem to give us a fair chance to study the results of treatment. For many years I have been in the habit of gradually changing the diet list, never abruptly, but gradually withdrawing objectionable articles of food till I have brought them down to the point where it seemed to me for a period of time a struggle between their appetite and their wish to obey me was the point at issue, and beyond that point I hardly think it is wise generally to control them, so much so that as the amount of sugar comes to a low point I have sometimes gradually introduced the carbohydrates to see if there was any increase beyond that point, if not, to permit their limited use, and if there was an increase, to withdraw, and I have quite frequently found that a gradual improvement went on, even though I gradually introduced hydrocarbons in connection with their food. And so in the cases that have come under my observation I have endeavored to study individually the manner, results of introduction and withdrawal. One point in the last suggestion of Dr. Purdy struck me very forcibly. It results from three cases I have notes of in which there were intercurrent diseases and the further free use of food was forbidden, and in which sugar disappeared for the time, with the withdrawal of food. The withdrawal of the excess of food gave immediate rest, and the result was very favorable. I have sometimes felt that some of these cases were permanently relieved; but a greater misfortune has been to find, through errors of diet, repeated returns of the disease, and when this is the case I find any form of treatment less available. I have hope for those who have judgment and will-power and will control themselves for any period of time after they seem to have perfectly recovered, but I have none for those who are indiscreet.

With regard to the use of alcohol in diabetes, I have not used it as freely as has been suggested, and I do not know its results as well. I have found that the fatty foods introduced have been favorably received by most of my patients, to the extent that I have inclined freely to administer in connection with the foods that have been mentioned, cod-liver oil as a drug or in emulsion, and I have come to regard it in connection with the other articles of food as a favorable part of the diet.

Dr. JOHN FISHER—The question of diabetes is one in which more physicians ought to be interested, and we ought not to let this debate go by without further remarks. The first thing necessary in treating a case of diabetes and in teaching the subject, is a better classification than we have ever had. Dr. Purdy has read a paper tonight upon glycosuria, with a very slight attempt at classification of the cases. There is no physician perhaps in this Society who, in treating several cases of this disease, has not been struck by the great variation in the kind of diabetes that he was treating. For instance, when we get a case of so called glycosuria in a child, we feel that it is going to prove fatal in a short time. When we get a case of glycosuria in a young man who has a ravenous appetite, who consumes gallons of water daily and passes large quantities of urine loaded with sugar, we know that patient will last but for a short time unless we have some method of checking this dread disease. We encounter the disease in older men, say between 35 and 45 years old, who are lean; the kind that Dr. Purdy has referred to, men who have only a moderate appetite, or one which is below normal, while others have quite a ravenous appetite. Dr. Purdy holds that in such cases the proper thing is to make those patients gain flesh. The question comes up, What is the best treatment in order to make those patients gain flesh, and at the same time reduce the amount of sugar in the urine? There are several classes of cases of diabetes: the little child who rapidly declines; the young man or young woman who goes rapidly down; the lean man who has reached middle life or has passed it, and then there comes the older person who has reached 50 or 55 years of age, who, as Dr. Purdy says, is more amenable to treatment than any of the others. It is peculiar that when a person gets old they can stand disease better than a child, and it is a wonder to me whether there is not a different etiology for the glocosuria in a child than that in an old person. There is another class of patients who have diabetes, not uncommon, and they are fleshy people. I have, for instance, under my care at the present

time three such men, two of them six feet in height, one weighing 300 pounds, one 280, and a third, five feet eight inches in height, who weighed a few years ago 268 pounds. Dr. Purdy has told us that in cases of glycosuria the thing to do is to get the patients to gain flesh, and I want to ask the Doctor if he would want these men to put on any more flesh? I do not ask him this question in a spirit of fun. One of these patients in the last six weeks, under treatment, has decreased in weight from 268 to 252 pounds, and I was under the impression that this was a good sign and encouraged loss of flesh. This loss of flesh may be due to his restricted diet, but he had an extra good appetite, drank large quantities of water previous to treatment and was getting up every two hours at night for the purpose of urinating, and sometimes every hour. Under a restricted diet he has been able to go all night without passing any urine. The quantity of glycosuria was eight grains to the ounce when treatment was commenced; at the end of three weeks, he was without any sugar in his urine, and this continued for three weeks, when the condition again returned, so that last week the quantity of glycosuria was four grains to the ounce. It has been a question in my mind whether this fleshy man would not be better off if he lost a good deal of flesh. The same may be said of the other cases. I am positive that these men are in a safer condition with diabetes than lean men would be with the disease. I believe most of you would rather treat a fat diabetic than a lean one. It has struck me that there is some difference in the cause of diabetes in different cases, and if there is, we can not treat all patients alike. It has been suggested that the liver may sometimes be the cause of it. In several cases where postmortem examinations have been made, disease of the pancreas has been found, I think in about one-third of the cases. Other organs have been found diseased in some cases. If the etiology is different our treatment ought to be different.

Dr. JAMES B. HERRICK—Dr. Hollister really made the few remarks that I intended to make. He touched upon a very important point, and that was the fact that our patients who were dieting acquired a certain tolerance for carbohydrates. And I would call attention to the way in which Van Noorden puts it in the classic article which he has written on this subject, and which Dr. Purdy has so highly commended. He states that improvement in the mild or moderately severe cases is not brought about by exercise of the cells, but by rest of the cells. By the withdrawal of the carbohydrates for a time the cells that have been surfeited with too much carbohydrates, too much sugar, are given a period of rest, and they are enabled to acquire tone, so that they then become tolerant of foods that they before rejected. The comparison is not inapt between the condition of these cells and the muscles of a heart that has given out. Where the heart muscle is extremely weak, the heart perhaps dilated, we know it is only by keeping the patient quiet in bed, in the recumbent position, that the heart muscle is enabled to recover its tone. Then when the muscle tone has been recovered the heart will permit movements of the body or physical exertion, as for example ascending the stairs, which before it would not tolerate. In the same way the cells, according to Noorden's theory, reacquire their tone and utilize carbohydrates they before rejected. Some of the older practitioners have, in the course of their experience, gotten on to some of the same facts that Noorden has so tersely, neatly and systematically stated. As Dr. Hollister tells us, he learned this fact of tolerance and the value of fats from his experience. And ten years ago one of our honored physicians taught me that cod liver oil was a good remedy to give to patients with diabetes. I remember at that time having put a patient upon a strict diabetic diet; the sugar lessened, but the woman also grew weak and was losing flesh. I said to the late Dr. C. W. Earle, "What can I do for this woman?" and he replied "Give her cod liver oil and cream, of course." I did, and she improved very much and is living today. Dr. Earle had somewhere learned the value of fats, and he gave to many of his patients who were affected with this disease large amounts of cod liver oil and fats. I do not want to inflict the diabetic bread question upon the society, but I should like to ask Dr. Purdy whether, in his experience, any of the so-called diabetic breads are really reliable and are to be advocated. Several authors, e. g., Williamson, Naunyn, Noorden, and others speak of them as frauds. I should therefore like to know what has been Dr. Purdy's experience with these breads.

Dr. EDWARD F. WELLS—The author of the paper should be congratulated upon having presented a contribution of exceptional value upon a subject which is of great practical importance and extremely interesting. The paper bristles with points of great practical importance. One of the first of these is the statement that the disease is in many cases, especially in elderly people, a controllable one. Another is that skill and time are required in the management of cases of diabetes. Now, there can be no doubt that a patient with diabetes will fare much better in the hands of one physician of moderate ability than he will at the hands of many physicians of the greatest reputation, that is, going in turn from one to the other. If a diabetic patient can be kept in the hands of one physician week after week, month after month, and year after year for many years, his condition may be greatly improved and his life indefinitely prolonged. In order to do this, however, he must have confidence in his physician. There is only one way to obtain and retain the confidence of a diabetic patient, and that is to treat him fairly and truthfully; take him into your confidence and perhaps a partial partnership in the management of his case, and it is well to state to him, as early as possible, exactly and in some detail, what he can and what he can not expect. Many of these cases can be improved only to a certain extent; the sugar diminishes to a mere trace, but can not be entirely done away with. The thirst declines, and the amount of urine passed approximates the normal; yet, with every care and management, these patients do not get beyond this point; they are made worse if they are not very careful; with them the limit of improvement has been reached. It is extremely discouraging to such a patient, if he has been led to expect that he can be radically, or completely cured, to find that he can be improved to this extent, but no further. It is, therefore, the height of folly to promise too much, but for the legitimate encouragement of the patient he should be informed, approximately, to what extent he can probably be benefited. The best thing for the patient, then, to repeat, is to tell him as early as possible just how far he can be improved and, if you know, why he can not go beyond a certain point. I am sure that the proper appreciation of those points will be of the greatest benefit to diabetic patients. I have had under my care for several months a patient who was troubled with great frequency of micturition, without much urine being passed, only about fifty ounces during the day, and the amount of sugar being reduced to a mere trace. For the relief of the frequent voidance of urine, sulphonal was given in doses of two and a half grains, three times a day. The sulphonal was continued for a long time without my knowledge, during which the patient improved very much. The urine was examined frequently, and starchy foods were gradually added, so that the amount of these which the patient was able to take during this period was much greater than before. Upon discontinuing the sulphonal, the sugar soon considerably increased in amount, so that a return to a more restricted diet was necessary. The question arose in my mind whether the sulphonal had anything to do with the temporary improvement in this case. Another question I would like to ask the essayist is whether he has noticed any relation between tapeworm and diabetes. Two of my patients, one seen several years ago, and one now under observation, happen to be troubled with both tapeworm and diabetes.

Dr. PURDY (closing the discussion)—With regard to the use of carbohydrate foods in diabetes, I think a great deal of damage is done by using them too freely without carefully watching the results upon the urine. It is quite a fad in cases where the stomach rebels against proteid foods, to return temporarily to the carbohydrates, but I think we can do better by simply reducing the quantity of food. In other words, I believe in strictly dieting these cases. If diets are of any use at all, let us follow them carefully, scientifically and accurately. I quite agree with Dr. Davis that patients should have all the carbohydrate foods they can assimilate and use, but no more, unless they can tolerate a great deal. If they can take 300 grams of carbohydrates and assimilate 200 grams, I would give them a moderate amount of carbohydrate food. But we should follow carefully every gram given by observing the urine for twenty-four hours, noticing what amount of carbohydrates has gone astray, and what amount has been used. I make these remarks because one of the most recent authors upon this subject, Williamson, makes the statement that the more severe the case of diabetes, the more liberal he is with diet. I would recommend exactly the reverse of it, and would say that the more severe the case, the more strictly would I diet it. With reference to the remarks of the Doctor who spoke of building up the body weight of the patient, 300 or 280 pounds is an excessive weight for a man even six feet high. Speaking generally, there is no question but what the higher we maintain the weight of the patient, the milder the disease will run. Any physician who has had much experience with these cases must have seen cases where the patients maintained good body weight and practically assimilated large quantities of carbohydrates; but the moment such patients lose their weight, especially if they become spare, it is an unequal fight to the end that they will lose it. Take a man and reduce him to 150

pounds and his case will go from bad to worse. If he can maintain his weight up to 170 or 180 pounds, he will go along favorably under proper regulation of diet, other conditions being equal, and his case will progress altogether differently.

With regard to breads, I look upon them as humbugs, nearly every one of them. I think they have killed more diabetics than any other one thing. I have in my book gone over this question and pointed out the quantities of starch in the so called group of diabetic breads manufactured in this country. The bread made in this city by Mr. Jerome, and to which Dr. Davis called attention at a meeting of the Chicago Medical Society about a year ago, is absolutely free from starch. But like all diabetic breads, so-called, it contains a small amount of sugar. I have used it, and consider it the best substitute for the bread I have used. It is necessary to warn the patient in using this bread that he can not use it like ordinary bread. He must not use over half the amount of ordinary bread; if he does, it will act just like so much more proteid food.

I wish to correct the impression conveyed by Dr. Wells in his remarks that diabetes is curable. I did not intend to convey the impression that it is ever curable. What I did say in my paper was, that diabetics beyond middle age, fairly well preserved, if they die of the disease it is either their fault or that of their physician; that this disease can be kept under control by a proper system of diet. But I believe once a patient is diabetic, he is always diabetic in the sense that he can not return to the use of carbohydrate foods *ad libitum*. I have seen cases, however, where glycosuria was brought about temporarily by the excessive ingestion of carbohydrates, which, when cut off, would cause the glycosuria to disappear. Replying to the question of Dr. Wells, I have had no experience with diabetics in connection with tapeworm. I have had no experience with sulphonal or cod-liver oil in the treatment of diabetes. In fact, I have little faith in the specific action of drugs in this disease.

Chicago Medical Society.

Joint Meeting of the Chicago Medical Examiners' Association and this Society, held Nov. 16, 1898.

Dr. JAMES H. STOWELL occupied the chair.

Dr. NICHOLAS SENN addressed the Society on the

SURGICAL DISEASES OF THE LATE SPANISH-AMERICAN WAR, WITH A VIEW OF ESTIMATING THE WAR RISK OF LIFE INSURANCE COMPANIES.

He said that the late war had been characterized by decisiveness and by intense patriotism on the part of the troops; while he had reason to believe that the opposite mental conditions prevailed in the Spanish camps. The American troops had to deal with an impoverished, half starved, discouraged enemy, which he thinks accounted for the easy victories and short duration of the war. He attributes the repeated victories on land and sea more to the soldiers than to any special military genius displayed by any of the commanders. Speaking from a surgical standpoint, he made the statement that the loss of life on the battlefield, or as the immediate or remote effects of wounds did not exceed 400. The loss in battle in Cuba was 267. A number of the most seriously wounded have died since. In Porto Rico, where there were four skirmishes, the number killed did not exceed 20, and the number of wounded was about 40. The Spaniards were armed with Mauser rifles exclusively. He had abundant opportunity to compare the injuries inflicted with the Krag Jorgensen rifle and the Mauser rifle, and the wounds differed very little. If any, the Mauser rifle was a more humane one, owing to the smaller caliber of the missile. The stopping power of these guns had been over-estimated, as every hunter of large experience knows. In examining from 1200 to 1300 of the wounded, he was astonished at the limited zone of contusion of the soft parts, which explains very satisfactorily the readiness with which these wounds healed, provided no infection occurred. There is a zone of comminution from both weapons at a range of about 500 yards. He found two cases, among the Spanish prisoners, shot with Krag Jorgensen rifle, gunshot wounds of the femur at the junction of the lower with the middle third; in both instances infection had occurred. The patient suffered from progressive sepsis; amputation was indicated, and promptly performed in a most primitive way, outside of the Spanish column, in the hot, broiling sun, there being no way of effecting disinfection of the dressings, instruments, etc., except with a kettle of questionable cleanliness. Heat was resorted to exclusively in effecting sterilization. At a certain range he is satisfied that both of the bullets from these rifles will inflict injuries to the long bones and produce more or less comminution. In one instance a young soldier was shot through the tibia two inches above the ankle-joint with a Krag-Jorgensen rifle, and the hole through the bone resembled very much one made with an ordinary drill. The shot was fired at a range of 1000 yards, but there was no comminution whatever. He referred to the value of the first-aid dressing. In Cuba the military surgeons were hampered in their work by lack of dressing material, also imperfect ambulance facilities. Then, too, it must be remembered that in Cuba hundreds were wounded and nearly 300 killed in three days; consequently the medical department was taxed to its utmost capacity in taking care of the wounded with the limited facilities at their command. In this war, with an insufficient number of medical officers at the front, as shown at the time, men occasionally had to wait for hours, and in a number of instances more than a day, before they were picked up and the first dressing applied. It was in those cases that suppuration most frequently occurred. In Porto Rico it was different. General Miles, who had command of the invading army, took every precaution to look to the welfare and the efficiency of the medical service. He felt the need of a medical adviser and often consulted him. The reverse was the case in Cuba. In Porto Rico affairs were conducted near the fighting line. The ambulance corps was in readiness, and ambulances were to be had in abundance. The moment a man was shot he was carried to the rear and a first-aid dressing, always on hand, was properly applied, and of about forty cases of all the wounded brought back from Porto Rico on the hospital ship *Relief* there were only two cases of suppuration, a remarkably small percentage, proving conclusively the value of a timely, efficient first-aid dressing in preventing wound infection.

He made interesting observations in studying the wounded in Cuba with reference to the sources of infection. In examining over 1000 cases, he became fully satisfied that the small caliber bullet seldom, if ever, carries with it pieces of clothing or any other infectious substance. The bullet itself is practically aseptic, as he had abundant opportunity to observe. In the majority of cases where wound infection occurred, he attributes it to the subsequent too frequent change of dressings and unjustifiable attempts to probe the track of the bullet. He had placed himself on record before going to Cuba, that he considers it unjustifiable, certainly unscientific, to resort on the battlefield or in military hospitals to the probe as an instrument of diagnosis.

He has seen a number of cases of gunshot wounds of the abdomen recover without laparatomy. He believes he was the first one to place himself on record, years ago, that a man shot through the abdomen from before backward on a level with the umbilicus or above, has a fair chance of recovery without operative interference. It is in those cases that the intestinal canal not infrequently escapes injury. In four out of sixteen experiments made for the special purpose, careful subsequent examination of the contents of the abdomen showed absence of visceral lesions which would have demanded a laparotomy. These are the cases that recovered during the late war. In almost every instance the bullet wound was on a level or above the umbilicus. The reverse was the case when the bullet traversed the abdominal wall below the umbilical level, and particularly if it passed through the abdomen transversely or obliquely.

There is one part of the surgical treatment of the wounded which he very much regrets was imperfectly performed. Praise should be given where it is deserved, and criticism bestowed where it is called for. He refers to the want of early immobilization of fractured limbs. At the front he could find no plaster-of-Paris, which should always accompany a fighting army. At Siboney he was furnished with plaster-of Paris, but it would not set. Plaster of Paris dressings, therefore, the sheet-anchor of the military surgeon in the treatment of compound fractures, were lacking or imperfect. Surgeons had to do the next best thing—search for splint material, and fortunately in Cuba nature was very kind to the military surgeon in this respect. The supply of wire splints was limited; it would not go one half the distance, but the cocoa palm did the rest. He found in the sheath of the cocoa palm leaf a most excellent material, in that it is somewhat plastic, porous and was utilized to great advantage in the immobilization of gunshot fractures.

In contrast to the experience in the Civil War, he found in the Spanish-American War that penetrating gunshot wounds of the knee-joint, of the hip-joint, and of the larger joints, recovered promptly, never proved fatal in the absence of wound complications. The men recovered, as a rule, with useful joints.

When he came to Montauk, where he was on duty for four weeks, he had an excellent opportunity to study the conditions of the returned soldiers, of which there has been so much said, particularly in the "yellow press." At this camp he did sur-

gery of a peculiar kind, and his experience there perhaps would be of more value to life insurance companies and their medical examiners than what he had said in reference to gunshot wounds. When the army of Cuba returned, it was an army of patients, not of soldiers. They were all anemic, emaciated, and, with few exceptions, brought with them, as an undesirable inheritance, malarial intoxication. In almost every instance physical examination showed enlargement of the spleen. As the result of infective substances in the gastro-intestinal canal, he met at Montauk with numerous instances of surgical affections directly traceable to intestinal infection. He found a number of instances of enormous ischiorectal abscess, anal fistula, hemorrhoids, ulceration of the rectum, varicocele and hernia. He attributes the prevalence of perianal and para-rectal suppurative processes to antecedent attacks of catarrhal proctitis, from which almost every one of the soldiers suffered at one time or another. It was at Montauk where he believes he was of most service to the troops, being placed in charge of the surgical department of an enormous National camp filled with thousands of sick soldiers. He is positive, as far as the Illinois troops are concerned, that not a single private was sent to the front with hernia. Exceptions were made in the case of officers. Speaking of privates, the examination of them was so rigid that he was sure not a single hernia escaped attention, and yet some of the men are coming back with hernias. He was astonished at Montauk at the number of cases of hernia that the soldiers claimed to have contracted during their short service. What is the cause? The fact remains, that the men were never exposed to forced marches; the longest march in Cuba was from Siboney to the front at Santiago, a distance of nine miles. He attributes the prevalence of hernia in the returning soldiers to the debilitating effects of the campaign and of disease; to the relaxing influence of the climate; to the disappearance of fat in the region of the inguinal canal. In the near future many of the mustered-out men will apply for pensions for the defect he has just mentioned. In an examination of ten thousand men at Camp Tanner, he found varicocele with great frequency in men of military age, as from 18 to 45 years. At least 25 per cent. of the applicants for military service were affected with varicocele. In not more than two hundred out of the ten thousand did the enthusiastic and ambitious recruits acknowledge that they experienced any inconvenience from this affection. He therefore believed at that time that varicocele of moderate size, without symptoms, should not disqualify an otherwise well built man for military service. He has every reason now to believe that the position he took then was the correct one, judging from his observations of the men that are returning.

Dr. WILLIAM CUTHBERTSON read a paper on

THE ENTERIC DISEASES OF THE ARMY CAMP IN THEIR RELATION TO LIFE INSURANCE.

He said it was the province of the life insurance examiner not only to pass upon the present condition of the applicant's health; the probability of his dying in a short time from some acute disease, but also as to the probable effect on his life expectancy of any disease the applicant might have had. Anything which may in any way impair the health of an applicant, should be carefully inquired into, and he maintains that camp diarrhea and dysentery are two of the most important of these diseases. The history of all armies operating in all parts of the world shows that camp diarrhea, typhoid fever and dysentery are the most prevalent disorders. They exist to a greater extent, however, in campaigns in very warm or hot countries. The records of our Civil War show that diarrhea and dysentery were more frequent and fatal in the Central region than in the Atlantic and Pacific regions. On the contrary, in civil life, intestinal inflammation is more prevalent in the Northern, Middle and Western States than in the Southern. During the recent Spanish-American War, while his regiment—the First Cavalry—was stationed in Illinois, the universal intestinal complaint was constipation; while almost immediately after their arrival at Chickamauga Park, Georgia, diarrhea began. This was so invariably the case that whenever a batch of recruits arrived from home, one would hear a member of the Hospital Corps remark, "There comes more diarrhea.' The summer months of June, July and August are those in which the greatest number of cases occur and the mortality is the highest.

The three most important factors in the causation of camp diarrhea, dysentery and typhoid fever are:

1. The effects of excessive or prolonged heat, which tends to weaken or arrest the digestive functions, leaving in the stomach and intestines undigested masses, which act both as irritants and culture grounds for the development of fermentative bacteria. On the other hand, excessive cold chills the surface of the body and congests the blood-vessels of the digestive mucosa, thus precipitating a camp diarrhea which soon runs on into a dysentery.

2. The totally changed conditions under which an army is compelled to live when campaigning from that which its members were accustomed to while in permanent barracks, or at home in civil life.

3. To the food and cooking. It is a hard task on the stomach to accustom itself to the rations furnished by the War Department during active service, more especially when that service is performed in a hot climate. His experience with the cooks in the volunteer regiments convinces him that a great deal of the camp diarrhea which existed was due to the careless and improper way in which the food was cooked and prepared.

The character of the water ingested is another cause for these diseases. Water containing inorganic salts in solution is very often purgative. According to Parkes, water which contains three to ten grains of putrescent animal matter may be hurtful. Water found in stagnant pools or marshy places has a slight effect on the intestinal mucous membrane, producing diarrhea. Sudden changes from heat to cold, unripe fruit, alcoholic excesses, are all conducive to these maladies. Finally, in the production of these diseases are numerous bacteria which give rise to putrefactive changes in the intestinal contents where digestion is impaired.

Enteric fever has proved to be the scourge of the late Spanish-American War. The greatest mortality did not occur where expected, namely, on a foreign soil, from bullet wounds and yellow fever, but right at home in large camps, where every appointment should have been up-to-date, with every appliance modern sanitary science could devise. These deplorable results can be directly chargeable to the Medical Department of the regular Army. A wet soil, damp weather, the presence of large quantities of fecal and decomposing matter, and large numbers of men congregated together, furnish a beautiful combination of circumstances for the development of this disease. The presence of hucksters in the camp seemed to be responsible for the spread of typhoid fever in no small degree. The eatables which they hawked from regiment to regiment became infected, and in this way was the disease transmitted. At Camp Thomas, Ga., part of the water-supply was taken from the Chickamauga River, the intake pipe being situated only a few yards above the point where one of the large camp drains emptied into the river. The rest of the water-supply of this camp was obtained from springs and wells located on different parts of the grounds, which soon became infected from the leakage through the already infected soil. Finally, the men themselves invited an attack of typhoid fever by their mode of living. They slept on the ground, very often four in a tent, the tent poorly ventilated, and very frequently closed up all day. They would do this in spite of all orders and warnings. They would buy food from hucksters, and drink river water, in defiance of all advice to the contrary. He is of the opinion that not only the water, but the soil, and even the air of these large camps were infected with the typhoid bacillus.

He entered into the causation of these diseases rather extensively, in order to show the extreme liability of the soldier to contract some of them; hence his undesirability as an insurance risk.

The average mortality of selected risks—and all the soldiers in the late war could be classified as selected risks—is 4 or 5 per 1000 per annum. The latest returns show the mortality of the American Army to have been 10 per 1000 for a period of six months, or four to five times greater than it should be. These percentages should settle definitely the question of the desirability of the soldier as an insurance risk, in the negative. Our woods and plains teem with good material for soldiers; we have an unlimited number of first-class medical men and sanitarians. We have a generous people, and he was assured that when the army is reorganized, it will be put in such a condition that during any future campaigns, the life and health of the soldier will be as well protected as if he were under his own vine and fig tree.

Denver and Arapahoe Medical Society.

Nov. 9, 1898.

Dr. WALTER HILLIARD read a paper before the Society on

THE SIGNIFICANCE OF CERTAIN LESIONS OF THE FUNDUS OCULI.

He said in part, that a cursory glance at certain anatomic features of the fundus oculi will suffice to explain its peculiar liability to pathologic changes. Incidentally it may be well to note some similar characteristics of the cerebral cortex in consequence of its embryonic and other important relations to the

retina. The cerebral cortex and retina are examples of organs having the so-called "end artery system." In these structures the arteries, with some unimportant exceptions, neither communicate with those of other parts nor, indeed, with each other. Even the arterioles may be termed "terminal," each one ending in its own capillaries. Another feature of importance is the capillary network of the retina, which is the finest and closest in the body. Their total area is at least 800 times greater than that of the short posterior ciliaries, from which they arise. In consequence of the law that the velocity of a current in a tube is inversely to its lumen, the velocity of their capillary current must be very many times less than that of the short posterior ciliary artery. The choroid presents another peculiar feature—its vessels are arranged in superimposed layers, progressively diminishing in size from without in. In the profound chronic toxemias produced by such causes as syphilis, chronic albuminuria, alcohol and diabetes, the earliest manifestations of the long series of necrobiotic changes are found in the arterioles and capillaries. A priori we should have anticipated this. Here the blood-current is slower than elsewhere, and the blood charged with toxic substances is in contact with the delicate structure of these minute vessels much longer than in the larger arteries and veins. In every study of the degenerations resulting from such chronic dyscrasiæ as just mentioned, one should constantly bear in mind that the necrobioses in the essential structures of the organs occur *after* the vascular lesion, and are largely *due* to them. The ophthalmoscopist holds not the black luxuriant locks, the beaming countenance, the firm elastic step of youth and manhood's prime, neither does he regard the gray hair, the wrinkled face, the bent form, the unsteady gait of his patient, nor, indeed, the care-worn look so characteristic of the old veteran of life's many storms, but in these chronic toxemias his prognosis is based solely upon what he observes in this beautiful little mirror—the fundus oculi.

In syphilis, chronic albuminuria and diabetes the lesions of the fundus oculi may always be regarded as terminal symptoms; the chancre, the bubo, the cutaneous rash are but memories of a distant past; the renal epithelium, the Malpighian bodies, the glomeruli were long since helplessly disorganized; it is a gennine and not evanescent glycosuria that we have to deal with. The presence of these lesions in the fundus oculi in the albuminuria of pregnancy bodes the imminent danger of a long train of diaster to the woman. Not only should her uterus be relieved of its contents, but the woman should be advised never again to become pregnant. The appearance of these necrobiotic lesions in connection with acute infectious disease is highly significant of a concomitant meningitis, especially basic meningitis

Dr. Wm. C. Bane reported a case of

VISION OF RIGHT EYE DESTROYED BY THE KICK OF A HORSE ON RIGHT SUPRAORBITAL RIDGE AND RIGHT CHEEK.

On September 14, 1897, he was requested by Dr. J. N. Hall to see D. R. D., aged 44 years, occupation, stone-mason. The patient gave the following history: Five days previous he was pitched from a buggy, fell near the horse, and was kicked in the face. For eleven hours he was unconscious. On the second day he discovered that he had bare light perception with his right eye. Examination revealed a lacerated wound, one inch and a half in length, extending to the bone, immediately over the supraorbital ridge. The tissues covering the right malar bone were swollen and discolored. There were also some irregular cuts in the right upper lip. There was slight ecchymosis in the tissue of the lower outer quadrant of both eyes. Action of external ocular muscles was normal. He had no light perception with the right eye. V. L. eye = ⅝. Field for white, normal. Pupils were equal. The papillary reflex of the right eye was absent. The associate reflex of the right with the left eye was normal. The mediæ were clear and the fundi normal, there being no change in the discs or vessels. Prognosis as to vision of the right eye was unpromising. Hearing: Right ear = watch in firm contact. L. ear = not in contact. Patient stated that he had not been able to hear the watch on contact with his left ear for ten years. He was able to hear the voice at the ordinary pitch with either ear. On Nov. 9, 1898, R. E., no light perception. Blue white atrophy of the right disc, absence of capillary vessels and slight narrowing of the retinal arteries. L. E. V = ⅝. Disc, normal. At the time of the accident there evidently occurred fracture of the orbit or bony canal through which the right optic nerve passed, and with it loss of function of the right optic nerve either from laceration of the nerve, or hemorrhage into its sheath, or both. Dr. Van Hölder has examined 124 cases of fracture of the skull, in 86 of which the fracture extended into the orbital roof. In 63 of the 86, the fracture was through the canal, always through the upper plate, occasionally through the inner, or both. In 42 cases there was hemorrhage into the sheath of the nerve.

French Congress of Gynecology, Obstetrics and Pedriatry.

Marseilles, Oct. 8-10, 1898.

Pozzi extolled the benefits of scientific congresses, in which he is an enthusiastic believer, although, he observed, the best results, the real scientific gatherings of the congress, sometimes occur in the intervals between the regular meetings. He compared a congress to a bottle that has just been shaken up: Leave it alone a while, the sediment will settle and the wine can be decanted. What matter if there are occasionally dregs as long as there is so much liquor above that is worth preserving! He mentioned that France alone has no chair of gynecology or infant surgery, while even Roumania now has a model, endowed gynecologic institute. He advocated the introduction of postgraduate courses into the French universities.

President Pinard called attention in his opening address to the necessity of specific treatment of syphilitic parents, and the frequency of degeneracy among the children of parents addicted to alcohol.

Le Gendre's address on "Dyspepsia in Boarding Schools," stated that in spite of modern hygiene, dyspepsia is more frequent among children now than it used to be in our father's day, and seems to have a nervous or neurasthenic heredity as the foundation, and gastro-intestinal disturbances as the manifestation, frequently presenting misleading symptoms. He noted the connection between this dyspepsia and appendicitis later. He advised better hygienic arrangements, notwithstanding the wonders already accomplished; no sport carried to extremes; the time devoted to meals lengthened; reiterated counsel as to mastication; more milk and eggs in the diet; less salads, and other green vegetables; beans, peas, etc., in a purée, as the hulls are trying to some intestines. The peculiar dyspepsia due to the ingestion of bread too fresh and spongy should be carefully guarded against. More important than all is the co-operation of the family with the school. The family physician should write to the school physician and instruct him as to the tendencies of the child placed in his charge.

Perrin discussed the "Purpuras of Childhood," which he classifies as: 1, primary, infective; 2, rheumatic; 3, Werlhof's disease, and numerous secondary infective forms.

Le Gendre would like to abolish purpuras out of the nosology, as it is as illogical to compare them with each other as the headache in neurasthenia and in meningitis. He mentioned a case of purpura in a neurasthenic child that had resisted treatment for three years, cured with absolute rest and protracted baths.

Guinon spoke of

COLITIS IN CHILDREN.

Under three years of age it usually appears as gastro-enteritis, but after this age it resembles more the colitis of adults, and has the same foundation: a neuro arthritic predisposition. He classifies it as acute colitis, with its mucous or catarrhal form and the dysenteric and chronic colitis, which may be mucomembraneous, either indolent or enteralgic, or else paroxystic, either simple or dysenteriform. Colitis may be confounded with appendicitis, although there is less localized pain, or with peritonitis, dysentery, typhus or tuberculosis. Complications are also frequent; furunculosis, lithiasis, broncho-pneumonia, peritonitis, etc., which obscure the diagnosis. In the chronic form the indications are to combat the neuropathic tendencies with frequent, protracted baths, tepid douches every day, avoidance of fatigue and walking, especially when there is pain. Conform the diet to the predominating diarrhea or constipation. Milk frequently is responsible for the former. Give hot compresses to the abdomen morning and evening. Modify the intestinal putrefactions with calomel, supplemented with benzonaphthol combined with betol and bismuth salicylate or magnesia. The constipation should be kept under control. Castor-oil in small doses is the best laxative, if one is required. Gentle, cautious massage is beneficial. Others reported coinciding appenditis and colitis, treated with water only for twenty-four to thirty-six hours, then with diluted milk and injections of serum. A case of typhus in a two months old babe was reported, in which the serodiagnosis was positive, and confirmed by the necropsy.

Hoffa discussed the subject of orthopedics and exhibited radiographs showing the fine results attained with his method of testing clubfoot, congenital luxation of the hip and scoliosis. He treats the latter by first rendering the spine flexible, with gymnastics and an apparatus, until the child can himself actively straighten the deformity to some extent. When the spine had thus become mobilized, he applies a cast to hold it in the correct position. If this method is perseveringly followed the results are very satisfactory. He has also been very successful in Little's disease with massage, passive movements

and an orthopedic apparatus. Many children who were in a most deplorable condition are now able to walk and even dance.

DUCROQUET suspends the child in the Sayre by the head alone, to reduce the hump in scoliosis and apply the cast thus in the walking position. He presses on the hump with the right hand while embracing the pelvis with the left arm, forcing it backward. He observed that it is a great mistake to expect the cast to compress the body into the correct shape; it is only to maintain what has been otherwise secured. Eschars are produced if this rule is neglected.

WEILL of Lyons discussed

HEART AFFECTIONS IN CHILDHOOD.

He said that from the therapeutic standpoint we must distinguish between functional disturbances and those due to congenital or acquired anatomic causes. There is no rational treatment for congenital heart troubles, but etiologic factors can be utilized in the prophylaxis, such as the effects of consanguineous marriages, syphilis or rachitis on the part of the mother. The preventive is also the principal treatment for acquired heart disturbances; the salicylic preparations at the slightest indications of rheumatism, cold baths in typhoid, antisepsis of the mouth in scarlet fever. In case of endopericarditis, which is usually caused by rheumatism under five years, the underlying rheumatism must be cured. Compensation is more frequent in childhood than in adult life, and the physician has only to sustain it by appropriate hygiene, muscle gymnastics, food, clothing. The treatment of functional disturbances varies as they are congenital or acquired. With the congenital there is usually cyanosis and chilliness for which a warm climate is to be recommended. The various symptoms are treated symptomatically. Digitalis is given as to an adult in the required form, especially with serious asystole, to children over 5 years of age. Under this age, caffein, strophanthus, spartein sulphate, or convallaris majalis are to be preferred. Combined with this there should be certain gymnastics, massage of the extremities and abdomen, and chief in importance, the vibration of the precordial region and of the back, called in Sweden "digitalis massage."

BEZY reported several cases of hysteria in children, simulating peritonitis.

MOUREN stated that since he had been using artificial serum in injections for prematurely born infants his mortality had fallen from thirty-six to six in his fifty cases in 1898. He injects 100 grams three to four times during the day.

D'ARTROS stated that he had succeeded in curing chronic serous meningitis in children over 2 years old with potassium iodid and mercury, even in the absence of syphilitic antecedents.

It was announced that Lannelongue's sclerogenic method of treating inguinal hernia has been applied in sixty-two cases with remarkably satisfactory results to date.

MERY mentioned as the indications of mixed infection in diphtheria or streptodiphtheria, the abnormally high fever, worse general condition, evidences of septicemia and pyemia, suppurations of the ears, joints, glands, and various forms of hemorrhage. Diphtheria serum can be given at first in a large dose, but it is of no use after the association has developed its full effect. Antistreptococcus serum can then be used. Local antisepsis is especially important, for which Roux recommends hot water and salt solution.

EXTRA-UTERINE PREGNANCY

was the subject announced for discussion in the Obstetric Section.

SEGOND observed that every extra-uterine pregnancy, once diagnosed, demands surgical intervention. Under four months, if the other annex is likewise affected or there is a uterine neoplasm, the vaginal route is without exception the one to be preferred, but in all other cases laparotomy is indicated, and the extirpation of the fetal cyst offers few difficulties in most cases. The removal of the cyst arrests the hemorrhage if visceral lacerations are avoided. An enucleable hematosalpinx indicates laparotomy, but with an encysted hematocele that has stopped bleeding the vaginal route is best. The sac must be extirpated with extreme gentleness and prudence. If a hemorrhage starts, the operation can conclude with a laparotomy, vaginal hysterectomy or the removal through the vagina of the entire adnexa. If the hematocele has periodic hemorrhages, laparotomy is the only operation. In case of extensive hemorrhage (peritoneal inundation), the necessity of a laparotomy is evident from the statistics: 86 per cent. mortality with expectant treatment; 85 per cent. recoveries with an operation. Over five months with a living fetus, the attempt can be made to save the child, waiting until the seventh month, or, according to Pinard, to the eighth or ninth. In such cases the exteriorization of the cyst is sufficient, leaving the expulsion of the placenta to nature. If the fetus is dead, it is best to wait until the placental circulation is reduced, then extract the fetus, exteriorize the cyst and abandon the placenta. The total extirpation of the cyst can be attempted in cases of tubal pregnancy, if the decortication required is not too laborious, requiring an excessive tamponing of raw surfaces, in which case total utero-annex castration is indicated. This should be reserved for the cases in which, having commenced the ablation of the fetal cyst, it is found impossible to complete it without overtaxing the strength of the patient. The tubo-interstitial location of the pregnancy or the existence of a concomitant uterine neoplasm are also indications for total hysterectomy. He disapproves of total castration on account of possible future trouble, remarking that the woman may yet bear fine children and that even the little "ectopers" may turn out well, of which he has recently had a striking instance. Martin has met with cysts which were too friable to be marsupialized. Jonnesco believes that the other annex is almost certain to be affected and that bilateral castration is the only safe plan. Leonte of Bucharest advises leaving the pregnancy alone if all is working well, but operating at once in case of suppuration or infection. In all cases he extirpates the entire tumor and irrigates copiously with salt solution.

POZZI called attention to the advantages of the lateral incision such as is done for opening up the iliacus, when the tumor is located at one side of the abdomen. The fetal cyst can be thus incised without opening the peritoneal cavity. He disapproves of listening to the appeals of the woman for castration to protect her from future ectopic pregnancies.

FRANCOIS related an observation of an intracervical abscess completely obliterating the canal in the sixth month in a primipara.

DERICHE has had a patient cured of menorrhagia, with the bicycle; others of chronic diarrhea; others, using it more energetically, cured of chronic constipation. Recent radiography of some men taking part in a bicycle six-day race showed that the viscera had a tendency to assume a more elevated position, which suggests that bicycle exercise might be used to counteract a tendency to abdominal ptosis.

DUBOURG'S conclusions from a comparative study of his forty-four hysterectomies for the removal of uterine fibroma or cancer of the cervix, were that the abdominal route is much to be preferred, and that its statistics will be much more favorable when it is no longer reserved for extreme cases, as is the present tendency. Two cases of recto-vaginal fistula after hysterectomy were reported, and the promptness with which they healed without further intervention emphasized.

The value of formochloral in obstetric disinfection was extolled by several.

SEDAN uses formolized soap for his hands, which kills staphl- and streptococci, and for the patient an aqueous solution of formochlorol which is odorless and does not stain the linen. For disinfecting the room one liter of formochlorol to 100 cubic meters for eight hours. The commercial formaldehyde is absolutely useless, on account of its polymerization.

QUEIREL asserted that the umbilic cord is strong enough to bear 7 to 10 kilos, and that, even with a macerated fetus, it is seldom that the weight of the fetus can break the cord (118 cases).

RICHELOT treats

RETROVERSIO UTERI

with pessaries and bandages, massage or hysteropexy. In simple cases a pessary may prove sufficient, but it is usually a delusion. Massage is much better, detaching adherences, relieving congestion and especially valuable in cases complicated with infection. The uterus must be healthy, a metritis cured, before surgical intervention should be attempted. Abdominal hysteropexy is a fine operation, curing many women and favoring conception. The threads must be applied exclusively in the anterior surface of the uterus, below the tubal openings. Certain cases are best treated with vaginal hysteropexy, but Martin and Pozzi object that this should only be performed on women past the menopause, adding that this operation is falling into disrepute generally. A case of non-puerperal osteomalacia treated with ovariotomy was reported. The ovaries were found much atrophied, with macroscopic cysts.

MANGIN has found ligating the uterine arteries a successful measure to control uterine hemorrhage rebellious to all other treatment. The only absolute counter-indication is a lesion of the annexes.

FOCHIER reported three cases of phlegmasia alba dolens rapidly cured with abscesses produced with spirits of turpentine.

MERIEL has found pencils of equal parts of methyl salicylate and airol .1 gm. very effective in endometritis.

MARCEL BAUDOUIN proposed a classification of operations on the uterus, based on the decimal system in use in libraries.

PRAGTICAL NOTES.

Calomel Injections in Lupus.—Thirty-eight cases have been reported cured or very much improved by this treatment, and ten not affected to date.—*Munich Med. Woch.*, November 15.

Ichthyol Stains on Linen.—Javelle water (potassium hypochlorite) will readily remove ichthyol stains from linen.—*Munich Med. Woch.*, November 8.

Aromatic Cod-Liver Oil.—According to Duquesnel, the odor and taste of cod liver oil can be disguised entirely by the following formula: Ol. jecoris. flav. 150 gm., ol. eucalyptus. ether gtt. ii. —*Munich Med. Woch.*, November 15.

Trifacial Neuralgia and Migraine.—Apply, locally, a tampon moistened with the following: sulph. ether 50 gm., melissa alcohol 50 gm., menthol 20 gm. The pain vanishes with the refrigerating effect produced, and relief is experienced for hours.—*Gaz. Méd. de Liège*, November 13.

Gluten Capsules.—Bely utilizes the property possessed by gluten, of not being affected by the gastric secretions, to make a capsule of it for the administration of creosote. He prefers the formula: pure creosote 15 gm., balsam of tolu 05 gm., lime glycerophosphate 05 gm.—*Journ. de Méd. de Paris*, November 13.

Trichloracetic Acid in Tympanic Perforations.—B. Miot reports forty-nine successes in fifty-one cases of perforation of the tympanum by Okuneff's method of etching the edges of the perforation with trichloracetic acid to induce cicatricial obstruction of the hole. If the edges are refractory to the action of the acid, he recommends radial incisions or galvanocauterization to freshen them.—*Cbl. f. Chir.*, October 29.

Bacteriology of Accidental Wounds.—A study of 222 wounds demonstrated that there were only 17 sterile, and that most of the microbes found were clinging to the blood clots. Copious rinsing is therefore urgently indicated to remove as many of the germs as possible by its mechanical action. Airol or iodoform gauze for an antiseptic tamponade was found most effective in infected wounds, or bismuth oxyiodid.—*Cbl. f. Chir.*, October 29.

Bacteriologic Investigations in Diphtheria.—The process is rendered easier and shorter by Schottelius' suggestion that the cotton stopper to the test-tube have a stiff wire loop extending below, to the end of which another piece of cotton is attached. With the stopper for a handle the throat is wiped with the cotton on the end of the loop, which is then inserted into the test-tube, the stopper closing it, the whole placed in a paper tube closed with a cork, enclosed in an envelope with the address printed on it and sent to the Institute. The entire contrivance is supplied by the Freiburg Institute for 25 pfennige.

Modern Treatment of Migraine.—Most cases of migraine are due to intoxication, auto or exogenous, and the indications are to regulate the organic changes, increase diuresis and diaphoresis. Quinin, antipyrin, acetanilid and phenacetin are absolutely contraindicated, as they diminish the organic exchanges. Salicylic acid is an exception, but the increase produced at first is followed by a decrease, and it can not be used long at a time. The measure which fulfils all conditions is a vapor bath or prolonged pack followed by cold applications, combined with an appropriate diet.—Stekel: *Rev. Gen. de Path. Int.*, November 5.

Mechanical Stimulation of the Skin.—F. Lots describes (*Ztschrft. f. klin. Med.*, xxxv, 2) his success in curing or remarkably improving a number of nervous affections, with friction with a loofah, of one member at a time, for ten to twenty minutes, two or three times a day, the patient in bed, supplemented by running around barefooted on pebble stones spread on a blanket on the floor of the room. The pebbles are about 1 cm. in diameter and are well rounded. The sensation is not disagreeable after the first day or so. The feet become warm, the appetite and intestinal peristalsis are increased, while the general condition improves in every respect. His cases included 11 of neurasthenic cephalea; 2 of nervous children with a tendency to chorea; 2 of general nervousness in adults; 3 of intermittent pulse; one case of incipient and one of advanced tabes.—*Munich Med. Woch.*, November 15.

Heroin in Coughs.—Manges of New York, in the *New York Medical Journal* of November 26, presents his experience with this drug in the treatment of coughs. In a few cases he found disagreeable after-effects, with the symptoms complained of referred to the sensorium. These symptoms were, however, much more mild and far less frequent than after morphin or iodin. In the aged, not more than twentieth-grain doses are to be given, as they bear the drug poorly. The drug allayed coughs promptly and efficaciously in numerous cases, though in some one-sixth of a grain was necessary. The results were not so good in purely neurotic coughs. The only case where no relief was secured was one of dyspeptic asthma, though other asthma cases gave good results. The results were not uniform in pulmonary tuberculosis, but were better in the early stages, smaller doses being necessary for later stages.

Home Treatment of Chronic Morphinism.—Hirt of Breslau has cured twenty-seven out of thirty-five cases. Two committed suicide during the first three days, when the morphin is absolutely denied; the remaining five either relapsed or failed to complete the cure. A reliable attendant is indispensable, and he adds that only a female attendant will answer. During these first three days the patient is kept asleep with 3 grams of chloral or trional, and a bath at 27 to 28 degrees C., with a cold douche, if the sleep is agitated. After three or four days a suggestion-therapeutic treatment is commenced, first extending only to the drug itself and its dangers, and then including the patient and inspiring him with fear and abhorrence of its effects. He only attempts to treat patients whose daily dose is under 0.75.—*Therap. Monatsheft*, 10.

Counter-indications to Breast-feeding an Infant.—Tuberculosis is an absolute counter-indication; with many other diseases the question is not so much the nature as the severity and degree of the affection. Anemia is a relative, the different cachexias positive, counter-indications. The general condition is the guide after an operation has been performed on the mother. Local counter-indications are affections and malformations of the nipples, which can not be remedied with cocain, artificial nipples, etc. Epilepsy, chorea, psychoses, are counter-indications on account of the danger of accidents to the child. Hereditary syphilis is a formal indication for breast-nursing. The quantity and quality of the milk may prove counter-indications; the milk of certain women has a purgative, toxic effect. The passage of toxic medicines and infective germs into the milk must also be borne in mind. The child should be isolated when the mother alone has a contagious disease. Nursing is permissible in localized puerperal infection, but the lacteal secretion fails in general infection.—*Journ. de Méd. de Paris*, Nos. 35 and 37.

Argil for Dressing Wounds.—J. Stumpf describes (*Munich Med. Woch.*, November 15) his surprisingly favorable results obtained with the copious application of dry argil to wounds of all kinds, which heal under it without the slightest reaction. Even the suture threads pull out dry without in the least sticking. The absorbing power of the clay is most remarkable, as evidenced by numerous tests he reports, such as wadding a little cotton, very wet with water and defibrinated blood, and rolling it around in some clay for fifteen or twenty minutes, when it will be found so coated with clay that it is practically a heavy clay ball. Broken open, the wad of cotton drops ou

like the kernel of a nut, perfectly dry. All the moisture has been absorbed into the clay shell. He relates a number of instances in which crushed hands, suppurating ulcers, and even ozena, treated with the dry clay first lost all odor and then healed in the most aseptic conditions. He applies it to an "unfingered" wound without further infection, using the ordinary commercial article, heated by the druggist to 150 degrees C. Meat or slices of liver laid in the clay harden rapidly to a brittle, mummified substance.

Technique of Intravenous Injections.—An intravenous injection is almost entirely painless, differing in this respect from the subcutaneous. It works more rapidly and energetically and is especially valuable in severe forms of syphilis. Experience has demonstrated that the fear of embolism and infection were unfounded. Several injections can be made into the same vein. The needle is inserted perpendicularly, then the point turned toward the root of the member, the needle unscrewed to prove by the flow of blood that it is actually in the vein, then the ligature above is unfastened, if one has been tied, to render the vein more distinct. The prick through the skin is all that is felt. The needle is left a moment afterward to allow the injected fluid time to be carried away by the circulation. If the injection is painful, the needle must be in the tissues instead of in the vein. First proposed by Baccelli, Abadie is now introducing the method into France. The formula used is one part mercur. cyanat. to a hundred parts dist. water. One c.c. is the amount for a single injection. They are made every day or every other day, according to the severity of the case. Fifteen to thirty are usually the limit of treatment required.—*Riforma Méd.*, 1898, p. 203.

Vaginal Abdominal Section.—Löhlein has found this operation extremely satisfactory in a number of cases (forty-two during the last two years). The trauma and the possibility of infection of the peritoneum are very much reduced. The patient feels subjectively well from the first, afterward. The easy and thorough evacuation of all fluids in the peritoneal cavity, and the possibility of combining with it a number of other interventions on the perineum, vagina, etc., recommend this operation. The difficulties liable to be encountered are a narrow or rigid vagina, solid consistency of the morbid products to be evacuated, and impossibility to reduce their size by puncture and detaching parts. A ligature became unfastened in three cases, requiring the application of forceps for thirty-six hours. In a number of cases he was obliged to complete the operation with laparotomy, for which reason he advises that the abdomen should always be prepared beforehand as for laparotomy, as well as the vagina. In one case the ovary was removed through the posterior vaginal incision, without interrupting pregnancy. He has been especially successful in peritoneal tuberculosis. The operation was performed once to differentiate carcinoma from tuberculosis.—*St. Petersb. Med. Woch.*, October 29.

Avoidance of Splints in Colles' Fracture.—Mr. Jonathan Hutchinson has encouraged his house surgeons at the London Hospital to treat cases of Colles' fracture without splints. His instructions were never to put on splints unless there was displacement which could be removed by extension, and which returned when extension ceased. In such cases, a very small proportion only, splints are indicated, but they ought not to be kept on long. If the routine treatment by splints was laid aside it would be greatly to the advantage of patients and to the credit of surgeons. In many cases treated in the orthodox way, the wrist and fingers become stiffened, and the hand often becomes painful and useless. Nineteen-twentieths of these cases would have done well and escaped stiffening if the wrist had been kept between two cushion pads for a fortnight. The public, as well as the profession, seemingly think that there is a necessary connection between a fracture and a splint. If one reflects on the real condition present in Colles' fracture, the truth of these remarks will be evident. In many there is no displacement whatever, and no movements of the patient could produce any. In others there is displacement of the carpal fragment backward to the radial side. If this is present, and can be removed by extension, and returns when extension is remitted, then a splint is necessary, but not otherwise.—*Med. Rev. of Rev.*, October.

Intestinal Surgery: Use of Murphy's Button.— Mr. Frederick Treaves of the London Hospital has had an experience with Murphy's button in fifty to sixty cases. In his opinion, of the various appliances for uniting the divided bowel, the button is the best; not that it can be regarded as a perfect instrument, but it compares favorably with the other forms of apparatus having the same object. He quotes Chelius to show that a French surgeon named Denans, sixty-two years ago, offered a procedure which prefigures the Murphy button; in Denans' procedure he "introduced into the upper and lower end of the divided gut, a silver or zinc ring, thrusting it inwards about two lines from each end; he then brought the two ends together over a third ring, of which the two springs retain the external rings. The included ends of the intestine mortify and the rings thereby becoming unfastened are discharged by stool after they have united the serous surfaces in contact." The results following the use of Murphy's button are certainly satisfactory. The button requires no elaborate preparation; it is always ready; its introduction is exceedingly simple, and is effected in a few minutes. The two parts of the instrument may certainly jam, but that accident is the result of careless handling. He has never known it to induce a grangrene which has extended beyond the limit of the button. The two definite and undoubted objections to the button are these—it may be indefinitely retained, and its separation may be followed by contraction at the artificial opening. In only two cases of gastro-enterostomy performed by Mr. Treves did the retention cause any trouble. In one case the button did not leave the stomach for a year, and the surgeon did a second operation for its removal; a skiagram having shown very clearly that the button was still in the stomach. As an example of the contraction of the colon that may occur after the use of the button, Mr. Treve instances the following case: "A man, aged 61 years, who had had symptoms of chronic intestinal obstruction for some months, was seized with symptoms of acute occlusion of the bowel, attended by immense distension of the abdomen and stercoraceous vomiting. Laparotomy, performed in January, 1897, revealed an epithelioma in the center of the sigmoid flexure. The urgency of the case and the great distention forbade any attempt at excision. I therefore effected an anastomosis, by means of a Murphy's button of the largest size, between the two extreme ends of the sigmoid flexure. The diameter of the button was $1\frac{1}{8}$ in. Fluid feces were passed before the patient left the table and he was at once relieved. The button, which had already been used in two previous cases, was passed on the twenty second day. The patient was walking out of doors at the end of the fourth week. In March, 1897, he had regained his original weight and his bowels were acting well with aperients. I then performed a second laparotomy to remove the sigmoid flexure. Although only thirty eight days had elapsed since the passing of the button I found the artificial opening I had made so contracted that it would do no more than admit my little finger. I removed the whole sigmoid flexure and united the descending colon to the rectum by means of the same button. This button was passed on the sixteenth day. The patient recovered rapidly and remains in sound and vigorous health. This association between previous distention of a viscus and the subsequent contraction of the aperture made in it, is, of course, by no means limited to Murphy's button. It applies to nearly every method in vogue for carrying out the operations now under discussion. Still, in spite of many drawbacks and many failures, intestinal surgery has made within the last few years decided and substantial advances; but it will fall short of perfection until antiseptic surgery, which has so far penetrated only to the serous covering of the gut, has reached the mysterious and septic lumen which lies within the bowel wall.—London *Lancet*, November 5.

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SATURDAY, DECEMBER 10, 1898.

THE PRESIDENT'S MESSAGE.

The President's message again recommends the commission of experts asked for by the American Public Health Association, and it is sincerely hoped in medical circles that a certain Washington Bureau will kindly permit Congress to act on the recommendation of the President without too much opposition.

In my last annual message I recommended that Congress authorize the appointment of a commission for the purpose of making systematic investigations with reference to the cause and prevention of yellow fever. This matter has acquired an increased importance as the result of the military occupation of the Island of Cuba and the commercial intercourse between this island and the United States, which we have every reason to expect.

The sanitary problems connected with our new relations with the Island of Cuba and the acquisition of Porto Rico are no less important than those relating to finance, commerce and administration. It is my earnest desire that these problems may be considered by competent experts and that everything may be done which the most recent advances in sanitary science can offer for the protection of the health of our soldiers in those islands, and of our citizens who are exposed to the dangers of infection from the importation of yellow fever. I therefore renew my recommendation that the authority of Congress may be given and a suitable appropriation made to provide for a commission of experts to be appointed for the purpose indicated.

THE NORTH-WEST FRONTIER DISTURBANCES IN INDIA.

From an official report we gather some items of information concerning the medical provision for the troops engaged with the hostile tribes from June 19, 1897, to April 6, 1898, which may be of interest at this time when we are investigating what was done and what was not done for the care of our sick and wounded during the Spanish War. The corps units mobilized consisted of sixteen batteries of artillery, nine regiments of cavalry, ten companies of sappers and miners and fifty-nine battalions of infantry, aggregating 18,688 British officers and men, 41,677 native officers and men and 32,696 followers, giving a total of 93,061. The medical arrangements included fourteen British and twenty-two native field hospitals of 100 beds each, a total of 3600 beds. There were no regimental, battalion or battery hospitals. There were in addition to the accommodations of the mobilized field-hospitals, 6725 beds available for use at base or general hospitals. The medical and hospital personnel consisted of no less than 9658 men, or over 10 per cent. of the command, followers included.

There were 41,055 men admitted to sick report during the nine and a half months and 1602 deaths, the admissions being at the rate of 451.70 and the deaths at the rate 17.20 per thousand of the strength. Between June 28 and Dec. 27, 1897, the average percentage of sick among the troops in the field was 4.58, the minimum rate at Kohat-Kurrum, 1.52; the maximum rate at Peshawur and vicinity, 10.52. Very great attention was paid to the sanitary state of the various posts and camps by the medical officers, and as a rule their condition was remarkably good The weekly sanitary inspections were carefully made, and especially with a view to the detection of incipient scurvy, which was entirely absent from the British troops. The few cases which occurred among the native troops and followers were very mild. The rations were good, the clothing suitable and the water-supplies safe-guarded as far as practicable. Quinin was used as a prophylactic when considered desirable.

SICKNESS IN THE BRITISH SOUDAN FORCES: A COMPARISON.

There has been so much denunciation of the sanitary conduct of the war that it is hoped is now over, and some of it undoubtedly based on real defects of management, that we have almost come to accept it as, in this respect, a terrible example of how such things ought not to have been done. In this country we reverse the practice of everywhere else and publish all our errors and deficiencies, so that all the world knows them; there is no limit to the scandalous chronicles given out, often without judgment or basis of truth. Elsewhere public policy and national pride tend to suppress disagreeable truths, and there is no such wholesale newspaper criticism of everything that can by any possibility be made to show a bad side.

The recent Egyptian campaign, in which Great Britain has just been so successfully engaged, has been held up to us as a model of excellence in everything that pertains to the sanitary management of a campaign, and to a large extent the praises are undoubtedly deserved. The perfect fairness of the com-

parisons that have been made to our discredit is however more than dubious. In the one case we have military operations long planned and prepared for, carried on in an arid country where germ infection must be at a minimum, and yet nowhere far from a base where by navigable river or railway every needed requisite could be obtained. The operations were carried on in a torrid climate it is true, but the bulk of the force was native, and the greater portion of the European contingent were experienced troops and had been acclimated to a certain extent by years of residence in lower Egypt. There were no special endemic diseases, like yellow fever, to contend with, no heavy tropical rains and muddy roads to interfere with transportation and render the distance of even a few miles a formidable journey, no dense tropical vegetation and malaria-breeding marshes—for a war in the tropics the conditions may be said to have been in every way exceptionally favorable. It may be added, that the English military are of all other fighting forces the ones most accustomed to tropical campaigning, and the administrative departments of the English army should be the best prepared at all times for its exigencies.

If we take up now the conditions of our own recent war we find nearly every condition reversed. With a war improvised to meet a popular sentiment, green soldiers, officers and men, transformed in a day from peaceful citizens, a little nucleus of a regular army, all the administrative departments of which, medical and otherwise, called at short notice from out of the ruts of more than thirty years of peace, and their tasks and responsibilities tenfold increased, no long careful preparation, and hardly any traditions even of tropical warfare and its requirements to guide their operations, it is little wonder that mistakes were made. Add to this the fact that the military operations of the Santiago campaign were carried on in a miasmatic tropical region, during the rainy season, when the climate is deadly to the unacclimated whites, the dense vegetation, the tropical rains and the total lack of good roads, and therefore of inland transportation facilities, and lastly the presence of the dreaded yellow fever, the wonder is not that the hardships and mortality were so great, but that they should have been so little. The comparison between SIR HERBERT KITCHENER'S successful Soudan campaign and that of Santiago should take in all these facts and then it would be far less disadvantageous in some respects.

Even as it is, we find some points where the vaunted excellence of the British military sanitation is not so evident, or, at least, where even their thorough methods were not altogether effective. In the *British Medical Journal* of October 22 we find the statement that reports in private correspondence state that sickness has been fearful among the English Soudan troops, "although the papers, save the *Chronicle*, say little or nothing about it." Cairo hospital is said to have been so full that about October 4 most of the sick had to be cared for under canvas. It is further stated that "the mortality during the campaign from enteric fever (which is now following the troops to Crete) will probably be found, when full reports are received, to be excessive. In the same journal a week later (October 29) we find the statement that since the return of the First Battalion of the Grenadier Guards to England typhoid cases have been abundant. One hundred and sixty men, altogether, were in hospital, many of them well-marked typhoid cases. Assuming that the battalion comprised some 800 to 1000 men—rather less than more after a campaign—this would make a formidable percentage, fully equalling that of some of our green volunteer regiments on their return from Cuba, where they had the special disorders of malaria and yellow fever also to combat. On the basis of these statements it would appear probable that typhoid fever was even a greater scourge to the British troops in the Soudan than to our own forces in the training camps and West Indies. Why this should be so is not perfectly clear, unless we are to suppose that the disease was contracted in the Delta and carried up the Nile, as the Upper Nile valley with its scanty population ought not to be a breeder of typhoid. Perhaps we may yet learn that the germ of typhoid is everywhere indigenous and only requires the favorable circumstance of an assemblage of men living under army conditions to make its presence known. It has certainly come well to the front as a modern military disease, and one that requires more attention as such than it has previously received. The fact that in the late Soudan campaign all the experience and foresight of former tropical warfare could not, under apparently especially favorable conditions, prevent its ravages to any appreciable extent bears witness to this need.

Our own experience in this special regard does not appear by comparison, much worse than that of our English kindred, and this disorder eliminated from consideration, it can not be said that the sanitary record of the late war is much worse than ought to have been inevitable with our unreadiness and inexperience in military operations. There is no use, evidently, in making comparisons to our disadvantage as regards this one form of possibly preventable military disease.

THE BROWN-BREAD DELUSION.

One after another the instincts of primitive humanity are getting an unexpected endorsement from modern science. Children always had the indecency to cry for sugar and to appropriate fruit wherever found, in spite of generations of alleged "hygienic" rebuke, which was really based on the good old Puritanic principle that because they were nice there must be harm in them somewhere. Now, distinguished pediatrists assure us that next to proteids, they are the most

important elements in the diet of budding humanity.

For centuries past the great dietetic struggle of the laboring man, master or workman, has been to get white bread for his daily diet. In all the old manuscripts we find the "fayre white lofe" alluded to as the choice delicacy. All the time his self-styled "betters," whether social or scientific, have united in assuring him that his daily brown or black loaf, whether of rye, oats, barley, peas or whole wheat was much more nourishing and wholesome. He never questioned their correctness, but he continued to prefer white and the more of it the better.

Many of us can remember the new backing which was given to these hygienic views some thirty years ago, about the time that "dangerous thing," a "little knowledge" of chemistry began to be diffused abroad. Their correctness was demonstrated beyond possibility of doubt, we were triumphantly assured, for had not chemic analysis, the new infallible Pope of science, revealed that brown bread was far richer in nitrogen, that greatest desideratum of all foodstuffs? White bread might make fat, but it was brown bread that made bone and muscle. Exploiters were quick to see the opportunity, and forthwith amid flourish of pseudo-scientific trumpets the great "Graham" crusade was launched, for the physical, mental and moral regeneration of humanity by the exclusive use of whole-wheat flour. By gems we were to be saved. The physical degeneracy of our working classes was fully accounted for in mothers' meetings by ascribing it to an excessive indulgence in white bread and tea. The whole horde of dyspeptics, whose name was legion, as this new spirit entered into them, rushed violently down a steep place until they landed upon a blameless diet of Graham crackers and hot water. Here they endured for a season the outcry of their rasped intestinal epithelium and hungry muscle-cells, in the sublime faith that they would have been much worse had they persevered in their former excesses of hot biscuit and pork. Ultimately, however, they were drawn to the conclusion, that although it might be better for their dyspepsia it was worse for them, and here the first absurdity of the hasty "scientific" conclusion was demonstrated by bitter experience. This was that it had failed to take into account the irritating effect of the hard, chaffy particles of husk, which contained the precious nitrogen, upon the gastric and intestinal mucosa. Fifteen years ago "brown-bread gastritis" was a recognized clinical type in some of our great hospitals, and our Philistine profession sent forth a counterblast to the effect that not more than three-fifths of the daily bread was under any circumstances to be brown, or evil results would surely follow, and as most of the enlightened had already backslidden to about this Laodicean position, they were obliged to sadly accept the edict and acknowledge that the new gospel, like many others, was too high to be lived up to completely. Still if it were not for the irritating qualities it would be the ideal food, and even these defects were turned to account in recommending it as a remedy for constipation, in addition to its other good qualities. For some reason or other, however, the consumption steadily decreased, every family, every class, every nation kept on discarding brown or black bread and substituting white as fast as they could afford it, and even the emancipated *illuminati* found themselves going back to the flesh-pots of Egypt and living without shame upon the white bread, the corn-meal mush, the flannel cakes of the common herd, who had no better guide than their mere appetites. The brown loaf still lingers upon the board, but rather after the manner of the mummy at the Egyptian feast, a tribute to a vanished ideal rather than an article of diet.

And now comes LAUDER BRUNTON with one of those admirably shrewd table reports of his, full of the practical genius which has made his name famous, and completely demolishes the fancied nutritive superiority of this "ideal food." His line of investigation was two-fold. first as to the actual nutritive effect upon animals of graduated exclusive diets of white and of brown bread; second as to the exact form in which the excess of nitrogen was present. The first group of experiments resulted in conclusively proving that although more nitrogen was present in brown bread, less of it actually got into the blood than from a similar weight of white bread; that white bread was not only more digestible and less likely to cause gastritis, but more nutritious, weight for weight, than brown. The second series showed the physiologic and chemic wherefore of the results of the first, inasmuch as the boasted excess of proteids was found to be chiefly in the form of the husk, or skin of the wheat-berry, closely allied to woody fiber, and absolutely insoluble in the intestinal fluids. Dr. BRUNTON pithily remarks that if nitrogen were all that we required, regardless of its form, we could grow fat upon air. He concludes by pointing out that it is precisely the stimulating effects of these insoluble and rather irritating ligneous particles upon sluggish bowels which give brown bread its well-established value in constipation. And as it is slightly richer in fat and distinctly so in lime and other salts than white, it would have certain advantages where the diet was deficient in these substances. But as our heaven-born, instinctive preference for white bread is almost equalled in strength by another for plenty of butter on it, the small fat and salt superiority of brown bread can cut but little figure practically.

We believe that the conclusions of this report will be endorsed by the practical experience of most general practitioners who have given careful attention to the diet of their patients. They found out long ago that their cases did not thrive so well on diets containing too much brown bread or "whole-meal" compounds, and will be rejoiced to find this fact explained upon chemic grounds. LAUDER BRUNTON has rendered

the profession a most valuable service by reporting his ingenious experiments. But it is worth noting that the hard-earned experience of the "man who carries the gun" in the army of medical progress, the family physician, had led him to precisely the same conclusion, and before that the untutored instinct of the natural man had reached the same goal.

Our instincts are the crystallized experience of thousands of preceding generations, and we are rapidly coming to respect them as such in these latter days.

THE LUXATION OF LARGE JOINTS IN THE COURSE OF INFECTIOUS DISEASES.

While it is a well-known fact that changes of greater or less degree frequently occur in the various joints of the body during the course of a large number of infectious diseases, it is not generally known that sometimes complete dislocations take place as the result of the progress of one of these maladies. From the time at which a swelling or disease of a joint was supposed to be due to a distinct local condition to that in which it was regarded as being entirely the result of a rheumatic or gouty taint, we have been continually learning that almost any infecting micro-organism which usually produces localized lesions in other portions of the body, may, if it finds favorable conditions for its growth in the joint, produce arthritic change. Thus we have the arthritic changes of purpura, of pyemia, of acute rheumatism, of the acute epiphysitis of infancy, which is practically an arthritic alteration, and the alterations which occur in rheumatoid arthritis. In addition to these conditions, which seem to arise from a direct infection of the joint, or parts adjacent to it, it is necessary to note that far greater lesions may occur than the inflammatory processes usually met with in the conditions we have named, and therefore a paper which has recently been published by COLLIER in the *British Medical Journal* for Oct. 15, 1898, in which he reports two cases of dislocation of the hip-joint following scarlet fever, is of interest. In the first there was suppuration in the neighborhood of the right hip-joint, but no evidence of bone disease, but dislocation of the right femur upon the dorsum of the ilium took place, necessitating an operation eventuating in a recovery in anchylosis with slight flexion. In the other case, also of scarlet fever, there was a history of injury on the fifteenth day of illness in that the patient fell out of bed upon his face, but it was not until a week later that any trouble with his joint was recognized. In this instance dislocation of the right femur of the sciatic variety occurred, and although reduction followed extensive myotomy, three years afterward shortening of half an inch in the length of the leg was present.

These cases of dislocation during the course of grave illnesses are of very great interest from the medical point of view, and of still more importance from a medico-legal aspect. As is well known, dislocations have been recorded in considerable number as having occurred during the progress of typhoid fever and acute rheumatism. In the first of these diseases the displacement of the bone has occurred in the earlier days of convalescence, when the patient has been so feeble that it has seemed as if the accident was due to the relaxation of the coverings of the joint and its associated muscles, with the result that the bone has easily slipped out of place, and in nearly all these cases there has been no evidence whatever of any local difficulty prior to luxation. On the other hand, in acute articular rheumatism where dislocation has taken place, there has nearly always been a history of arthritic difficulty prior to the accident, and instead of the dislocation producing pain of a moderate degree, as it has done in convalescence from typhoid fever, the occurrence of the displacement has been followed by great relief from pain owing to the overcoming of the vicious attitude which has been maintained by the limb. The cases of scarlet fever in which this accident has occurred have belonged rather to the typhoid class in that the dislocation has taken place without much pain and therefore without attracting great attention to its presence. As long ago as 1882 RAWDEN reported in the *Liverpool Medico-Chirurgical Journal*, an instance of dislocation following typhoid, in which having excised the head of the bone, he found it practically normal, even the cartilage being healthy, excepting for a little absorption at its periphery, while on the other hand ADAMS in a case of rheumatic dislocation of the hip found the capsular ligament ruptured and the torn margins of the rent closely embracing the neck of the bone. While it is true that unobtrusive monarticular synovitis with effusion may take place in convalescent patients, the literature of the subject does not reveal the fact that post-typhoidal dislocations have usually been due to this condition, and COLLIER believes that degenerative changes similar to those seen in muscular fibers result in softening of the ligaments and of their attachment to the bones. The possibility of recurrence of the dislocation under such circumstances is great, and the prognosis as to the correct use of the limb must be made with caution, since some cases seem to become entirely well while others never get rid of a certain amount of anchylosis or shortening.

CORRESPONDENCE.

Buying Patients.

HARTFORD, CONN., Dec. 1, 1898.

To the Editor:—Recently a physician who has attained some prominence in his neighborhood, wrote me asking what I was accustomed to give the family physician who sent his patient to my care. I replied that I never bought practice and never gave anything to physicians who sent me cases. He answered that he always received a fee of $10 for sending cases who could pay $20 and more a week. Where the bills amounted to

several hundred dollars, most medical men sent him 5 per cent. on all accounts over $200. From inquiries I found that two gold cure establishments had received some cases from this physician and an obscure New York specialist had also received and treated some cases sent by him. Within five years, since the prominence of "gold cures," I have heard of offers of this kind from managers of such places. In all my long experience with the profession, I have never before been approached by a reputable man, and I am confident that a very few medical men would ever stoop to buy or sell patients in this way. The real specialists, who depend on the profession for their cases, feel bound to the medical man to return the case to his care again with renewed confidence of the skill of the family physician. A kind of unwritten law has grown up, in which the specialist assumes the care of the case for a time, and expects to return it to the care of the family physician for further and more protracted treatment. In my experience in the care of alcoholic and opium takers, after a few months' residence in an asylum, the return to the family or general practitioner is a very essential part of the success of every case. The best results come from the general after-cure by the physician outside of the asylum. The case is sent to me by the physician for such care as he can not give at the time and place. When the acute symptoms subside, and restoration begins, it is often better to go back under the family physician's care. In all this the specialist acts as a consultant and has no claim on the patient, nor is he under any special obligations to the physician who sends the case. The physician is rather under obligations for the favor of special treatment, and return of the case to his care again. The idea of buying and selling the privilege of treating the case is repulsive to all sense of honor and professional courtesy. The physician sends his case to the specialist simply because it is the best interest of his case. No other course should receive the least attention.

Very truly,

T. D. CROTHERS, M.D.

The Commission Evil.

MINNEAPOLIS, MINN., NOV. 30, 1898.

To the Editor:—The editorial in the JOURNAL of November 12, on the "Commission Evil," sounds very much as though the writer had stumbled upon the unpleasant fact that some of his friends were engaged in the disreputable practice mentioned. The protest seems a very mild one if the evil is as wide spread as the writer claims. Dr. Morris' communication in the last issue (*vide* JOURNAL, p. 1314) affords the pleasant assurance that specialists in the East are still in sight, at least, of the ancient traditions. Unfortunately some of our western towns have become so infected with this evil that no honest, self-respecting specialist would dare make the effort to establish himself if he knew the facts. For the past few years, in this city, a patient with an eye bandaged could not walk our down-town streets without being approached by runners with the offer to take him to a better surgeon than the one he was employing. I do not know how many general practitioners are willing to accept bribes, but the fact that advertising quacks find it profitable to send circulars to the profession, offering commissions on all business sent to their surgical, lying-in and other hospitals, is very suggestive, and the fact that men known to be guilty of employing runners are gilt-edged candidates for any position in the gift of their professional brethren, does not indicate such a puritanic state of mind on the part of the latter as would blind them to the glitter of a dishonest dollar. The specialist who fees the runner or the family physician; the insurance examiner who divides his fee with the agent; the surgeon who operates cases for the advertising quacks; as well as the dishonest family physician who betrays his trust, are the parasites of our profession. I congratulate Dr. Morris on living in a community where such men are not the *leaders* of the profession.

EDWARD J. BROWN, M.D.

Gold Cures.

HARTFORD, CONN., NOV. 28, 1898.

To the Editor:—In my paper on "Gold Cures in Inebriety," in the JOURNAL of October 1, no reference was made to any combination of gold with other drugs for any diseases beyond inebriety. The managers of mercauro and arsenauro, well-known combinations of mercury and arsenic with gold, have misconstrued my statements to be reflections on their preparations. In this they are very much mistaken; no possible criticism was, or could be intended, and more especially as I have used this prescription in many cases with good results, and have repeatedly spoken of it in the *Journal of Inebriety*. My criticism was directed only to specifics of any form which sought to bring about results known to be impossible.

Very truly,

T. D. CROTHERS, M.D.

PUBLIC HEALTH.

Mouse Typhus.—The Austrian government has made arrangements to exterminate the mouse pest in lower Austria by inoculating mice with Loeffler's mouse typhus bacillus.—*Munich Med. Woch.*, November 8.

Pellagra in Italy.—We note in a recent report that sanitaria are being erected in different provinces to treat this disease. Persons affected are compelled to enter and remain forty days, in Padua twice a year. Malaria is the most serious complication of pellagra. It is hoped that the circular of questions submitted to each patient will in time throw some light on the obscure etiology of this affection.

Deaf and Dumb in Norway.—V. Uchermann has recently compiled the statistics of all the deaf and dumb persons in the entire country, with objective data in most cases. Half are congenital defects. Of the cases of acquired deafness, one-fourth were consecutive to scarlet fever, the rest mainly to cerebral and middle ear affections. The influence of heredity is marked, especially the heredity of consanguineous marriages, although the inheritance of deafness and dumbness frequently alternates with other abnormalities, idiocy, epilepsy, malformations, retinitis pigmentosa, etc. He attributes the preponderance of deaf and dumb children in consanguineous marriages to the accumulation of family peculiarities.—*Cbl. f. Chir.*, October 29.

Sulphurous Acid in Preparation of Fruit for Market.—As many hundreds of physicians are directly or indirectly interested in fruit culture, the following item from the "Consular Reports" (November) will convey to them a much needed line of information. The item is contributed by Consul Barnes at Cologne, Germany. "Persons interested in the exportation of American fruits to Germany strongly desire to remove all reasons for obnoxious official investigations, and have requested me, through the Department of State, to call the attention of the American shippers to this condition of affairs, and to the absolute necessity of abstaining from the use of sulphurous acid, or any such preparation, in the exportation of fruit to this market. A persistence in this practice will undoubtedly result in the entire exclusion of such fruits from Germany. Stricter attention must be given to the German laws. American dealers are still shipping to this market dried-apple slices which have been cured upon zinc frames. This process has been strongly condemned by the German Government, and the sale or handling of fruit thus prepared interdicted by law. These violations are suicidal in their effects, and damaging to the several branches of American trade. It is the opinion of

importers here that in some instances American pears are also treated with the sulphurous-acid process. It is of no consequence that competent medical authorities here have decided that fruit treated with sulphurous acid is not detrimental to health. It is sufficient for the watchful local official to know that the law forbids the sale of such fruit, and that his supreme duty consists in the strict enforcement of the law as he finds it upon the statute books. American fruits are so far superior to other fruits found in this market that it would seem an easy matter to dominate the trade, without a resort to practices which tend to discredit them."

Masks for Non-Isolated Tuberculous Patients.—B. Fraenkel has inaugurated, at the Berlin Charité, the innovation that all the tuberculous inmates must wear masks to catch the germs they expel in speaking and coughing, when they are in the common room, and only remove them while eating or expectorating. The patients soon become accustomed to the mask, as by impregnating it with some medicinal substance they suppose it is to be worn for their own personal benefit, instead of for the protection of others. Bacilli are frequently found on them. At the Dettweiler sanitarium the patients are trained not to cough when assembled at meals. Schäfer found that a leprous subject with ulcerations in his mouth scattered leprosy bacilli through the room in conversing. One of Fraenkel's assistants also discovered tubercle bacilli on his eye-glasses after a tuberculous patient had coughed. Hübner's tests are equally convincing. He took some bacilli prodigiosus in his mouth and established the fact that they were disseminated throughout the room as he spoke.—*Munich Med. Woch.*, November 15.

Spread of Throat Illness by Milk.—During 1897 there was at Surbiton a well-marked outbreak of follicular sore throat, and as the result of personal inquiry it was very soon found that a milk supply was the apparent factor in distribution. A visit to the premises was made with no result, and a close inspection of the cowsheds and of the employes was also made. A sewer was being laid in the road outside the farm, and for a limited period there was a smell to be noticed; but it was unlikely that this could have so far affected the milk (since it was not kept stored on the premises near this road) as to render it in any way dangerous to health. A man whose business it was to milk the cows, was examined and found to be out of health, and suffering from well-marked tonsillitis and gastrodynia, and further with suppurating whitlows on the hands. He immediately discontinued any employment with the cows, and no further case occurred. There were considerably over thirty cases of illness, some very severe, under my notice, and probably many more.—*Public Health* (London), October.

Resolutions on Department of Health.—Dr. Liston H. Montgomery offered the following preamble and resolutions at a meeting of the Chicago Medical Society, Nov. 30, 1898, which were unanimously adopted:

WHEREAS, Legislation on the bill which was introduced in the United States Senate during the early period of the present year looking toward a Department of Health as a separate branch of our Federal Government was deferred, owing to the impending crisis of the Spanish-American War; and

WHEREAS, Said bill has the endorsement of the AMERICAN MEDICAL ASSOCIATION, the American Public Health Association and numerous State and municipal medical societies throughout the United States; and

WHEREAS, Much foreign territory to this country has recently been acquired wherein epidemic preventable and pestilential diseases have been and do prevail, and as many problems in sanitary science shall require careful study in these new fields; therefore, be it

Resolved, That for these, and for other obvious reasons, the Chicago Medical Society, through its officers, shall immediately request the President, in his forthcoming annual message to Congress, to recommend said contemplated Department of Health as an urgent necessity to our greater republic, and as a proper method for the protection to health and as a means of preventing a greater loss of life to American citizens visiting these distant countries, and as a means of looking toward a higher civilization where disease and pestilence are sure to remain unchecked, and through the increase of traffic and commerce are liable to spread to our immediate shores unless some such humane measures are adopted;

Resolved, That a copy of this urgent appeal, namely, preamble and resolutions, be immediately transmitted to the President of the United States for the purposes herein explained, and to the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for publication, with the request that they be published in medical journals elsewhere.

Typhoid Fever from Ice Cream.—The annual report of Health Officer Dr. Hope of Liverpool, records a prevalence of fever in a suburb of that city, known as the Knotty Ash district. Four cases were notified to this office about the same time, all being among young children attending the same school. Fifteen cases followed at short intervals, all from the same school. After careful inquiry possible sources of infection which may have existed at the homes of the patients were excluded, and it was ascertained that the milk supplied at the various houses came from dealers whose premises were in good order. Meantime, an investigation had also been made into the conditions of the school. Careful examination exempted the water-supply and the drainage of the school from suspicion. It was discovered that two or more children had been visiting at Knotty Ash early in September, and were suffering from typhoid fever at their own homes, and later on a pupil in a school at Denbigh was attacked under similar circumstances. None of these patients had been at the Knotty Ash school. Ultimately the total number of children infected with typhoid fever amounted to twenty-seven. Inquiry elicited the fact that a village fair had been held in Knotty Ash on September 6 and 7, and that every one of the children who had suffered from typhoid fever, including those who did not attend the school, as well as those who did, had been present at that fair, and all admitted, with two exceptions, that they had eaten ice cream sold by a vender at the fair, and the two exceptions were believed to have eaten chip potatoes purchased from the same vender, though one was too young and the other too ill to give a definite statement. The vender in question was reported to have come from Warrington; but after a careful search in the city, it was found that he was an Italian and had an ice cream factory in a low district of Liverpool, and there was, at the time of the fair, a case of typhoid fever in his house. It may be added that the following were the results of a bacteriologic examination of a sample of ice cream purchased of an itinerant Italian ice cream vender in London. It contained upward of 500,000 organisms per cubic centimeter. The bacteria isolated were the bacillus coli communis (the cream contained 200 or 300 per c.c.), streptococcus pyogenes, staphylococcus pyogenes aureus, staphylococcus albus, bacillus liquidus, baccillus liquefaciens, bacillus liquifaciens fluorescens, and bacillus ubiquitus. Neither oidium lactis nor bacillus diphtheriæ was discovered.

Typewriting vs. Penmanship.—Dr. Bizzorero has discussed the advantages which typewriting possesses over the old-fashioned method of pen-writing. In his opinion penmanship is fraught with danger to the writer's health in a variety of ways. To begin with, the constrained attitude he is compelled to assume favors a distorted spine, and especially scoliosis, together with venous congestion, headache, epistaxis, dyspnea and congestion of the abdominal organs leading to constipation and dyspepsia, the latter disability being well-nigh inevitable should he sit down to write immediately after meals. The hands having to execute dissimilar work, the penman can not guide his pen without keeping his eye glued to its point, and so his vision is bound to suffer, asthenopia being a frequent sequela owing to the straining of the accommodatory apparatus. In the adults, vertigo and vomiting frequently complicate the case, but in children, whose power of accommodation is

greater, the complication to be feared is myopia. The use of a typewriter, according to Dr. Bizzorero, is a perfect remedy for all these evils, and for the following reason: The operator sits straight, with head erect and arms at liberty. His lungs have free play and his adominal viscera remain uncompressed. His eyes undergo no strain, for he is not obliged to keep them fixed on a moving pen, in fact, after a little practice he can turn them away from the keys whenever he likes without interrupting his work. That distressing complaint, writer's cramp, so common among people who have to live by their pens, has no terrors for the typewriter. His occupation is an amusement to him, and without the least discomfort he can return to it after eating. But it is not to the healthy alone that typewriting presents so many advantages. Numbers of people who have the misfortune to be palsied can not use a pen, whereas they can express themselves freely, thanks to the machine; and many sufferers from conjunctivitis, iritis or choroiditis who have been forbidden to write after the old-fashioned style can in the same way carry on correspondence with their friends at a distance. If proof were wanting that typewriting has no injurious effect on the eyes it would be forthcoming in the fact that the blind readily become expert manipulators. Dr. Bizzorero advances rapidity in writing as a hygienic advantage, but the legitimacy of the claim is not very apparent. His contention in favor of legibility is, however, more likely to find acceptance, for in truth there are many handwritings of which the attempted deciphering can not but be highly injurious to the health of the unfortunate persons whose sad fate it is to endeavor to interpret the hieroglyphics. —London *Lancet*, October 29.

To the Physicians and Accoucheurs of Illinois.—The law creating a State Board of Health, emphatically declares that it shall be the duty of all physicians and accoucheurs practicing in the State of Illinois, to report all *births* and *deaths* which may come within their supervision; and where the reports are not made the county clerk may recover a fine of ten dollars. This law was enacted twenty years ago. At the same time there was one enacted regulating the practice of medicine, which declares, in substance, that no one shall practice medicine in any of its departments in the State, without giving sufficient evidence of at least a minimum qualification, which with other provisions, are designed to be executed and enforced by the State Board of Health. Such enforcement has driven thousands of quacks and nostrum vendors, charlatans and mountebanks from the State, and kept them out for the whole time. Thus, while it has been a great protection to the people of the State, it has afforded, incidentally, *privileges and immunities to you as physicians* of the whole State. You will please recall that these laws were enacted at the instance of the physicians of the State, by a legislative committee appointed at the May meeting of the Illinois State Medical Society, in 1876, and both laws went into effect the next year. The law was enacted very much as the profession, then represented, asked that it should be. In the meantime you have been quite anxious to have the quacks and nostrum vendors and others made to obey the law, while you have persistently neglected to obey the law yourselves in the matter of reporting births and deaths, so necessary to the collecting of vital, sanitary and mortuary statistics, and without good reason, while enjoying the *privileges* and *immunities* of the laws. Now, when the State Board of Health feels that it is time to make some advances in sanitation and further suppression of quackery, and to raise the standard of practice as a better protection to the people of the State, which incidentally will extend your *privileges* and *immunities*, we feel that in view of your past conduct we can not very hopefully ask the Governor and Legislature, which is clearly our privilege under the law, for the much-needed legislation to enable the Board so to do; when we will most likely hear the rejoinder, "how do you expect the legislature to empower the Board to make quacks obey the laws when the doctors themselves do not?" In view of these facts, I suspect that you would better hunt up your old blanks and begin to practice reporting *births* and *deaths;* for while we shall ask for legislation along the lines suggested, we shall ask for that to enable us to enforce the collecting of vital and mortuary statistics as well. The blank forms in your hands and accessible to you are faulty, and some features of the reports required are burdensome, and you ought not to be made responsible for all the report requires; all of which will receive consideration at the next meeting of the Board, in January, but it is clearly your duty to comply with the law while you enjoy its privileges and immunities.—A. C. Corr, M.D., Pres. of Illinois State Board of Health.

Acute Epidemic Ophthalmia.—Hardly a year passes by, says Greeff, in the *Berlin klin. Woch.*, without an outbreak of acute Egyptian ophthalmia. No district is quite free, and each year acute ophthalmia makes its presence felt in or about Berlin. In the early Napoleonic time, Egyptian ophthalmia is said to have destroyed the sight of many hundreds in a few days. In pursuance of orders from the Government, Greeff has had good opportunity to study carefully true trachoma in regions where it is very common, and also one such epidemic in a district hitherto free. He discusses the features of certain epidemic ophthalmias which, though often confounded with trachoma or Egyptian ophthalmia, are really distinct. The mode of outbreak is not like that of trachoma, which does not spread so rapidly; trachoma is no doubt contagious, but every contagious ophthalmia is not trachoma. The contagious character of trachoma shows itself rather in the slow invasion of the other members of a family or household, of whom one or more has been affected for years, and this usually in a country or district where the disease has been endemic for a century, or it may be for ten centuries. He contrasts certain forms of conjunctivitis with one another and with trachoma. 1. In pneumococcus conjunctivitis, the pneumococcus (Frankel-Weichselbaum) occurs as an occasional inhabitant of the normal conjunctiva, and it may increase so as to bring about an epidemic. It is generally children it attacks; adults are but rarely affected. It is a transient malady, running a benign course somewhat quickly. 2. Morax and Axenfeld's diplobacillary conjunctivitis is a more chronic variety, in which the lids participate largely. In cover-glass preparations the germs are very numerous, lying for the most part in pairs, less frequently in chains. Implantation upon normal conjunctiva produces typic conjunctivitis. It is not certain that any epidemic of this has actually occurred. 3. The conjunctivitis of the Koch-Weeks bacillus seems to be the most frequent of the contagious conjunctivites. When in Egypt, Koch found the germ in cases of the slightest form of so-called Egyptian ophthalmia. It is the cause of acute contagious conjunctivitis. It sets in very rapidly. Both eyes are usually affected; pain, lachrymation, photophobia, and a sense of burning are complained of. The inflammation lasts about two weeks, and the prognosis is uniformly good. As regards the bacterial origin of trachoma there is nothing settled; whether a diplobacillus or bacillus septatus is the cause is not certain. In case of an epidemic conjunctivitis arising, it is possible to make a diagnosis of its true nature by examination for micro-organisms. Sometimes it happens that the medical officer of a school makes the alarming discovery that a great number of the students are suffering from follicular enlargement, and he may find it necessary to close the institution. He must be careful not to be misled by an epidemic follicular catarrh, or, to be more accurate, follicular swelling. Schmidt-Rimpler, while engaged in the study of the cause of the frequency of short-sightedness in schools, noticed that many children suffered from some affection of the conjunctiva, and decided to make inquiries as to the frequency of catarrh, etc., at a time when there was no epidemic; he found a percentage of 34. On investigation Greeff finds follicles in 27 per cent. of the children. He believes them to be due not to contagion, but to a general pathologic condition; they are quite common in anemic girls whose conjunctivæ are not in the least inflamed. Prolonged fomentation of the eye, as in the treatment of iritis, etc., will also produce them. The difference between them and trachoma granules is an essential difference.—*Edinburgh Med. Journal.*

BOOK NOTICES.

Repetitorium der Chemie. von Dr. CARL ARNOLD, Achte verbesserte und ergänzte Auflage, Verlag von Leopold Voss, 1898. Price 6 marks.

This work has been revised eight times in thirteen years, and, besides giving a good general review of chemic subjects, it treats of their special medical aspects and will make an excellent reference book for those who are able to read the German text. Particular attention is paid to the important combinations of the German pharmacopeia for the benefit of the physician and pharmacist. The body of the work consists of a section of forty-eight pages devoted to the principles of chemistry; one of 228 pages on inorganic chemistry; one of 280 pages on organic chemistry; one devoted to revised nomenclature. A good table of contents and general index completes the volume, which is printed on good paper, has a flexible cover and is a recommendation for the publisher.

Pamphlets Received.

Advantages of Permanent Abdominal Anus, etc.; Advantages of Trendelenburg Posture; On Resection of the Gasserian Ganglion; Removal of an Angioma of the Liver by Elastic Constriction. By W. W. Keen, Philadelphia, Pa. Reprints.

Advertising in Some of Its Phases. By Frank A. Munsey, New York City. Paper, pp. 44.

Are Complete Castrates Capable of Procreation? By B. P. Sturgis, New York City. Reprinted from Med. News.

Auenbrugger and Laennec, the Discoverers of Percussion and Auscultation. By E. O. Otis, Boston, Mass. Reprinted from Boston Med. and Surg. Jour.

Re Iborough Trial, A Note on The. By Havelock Ellis. Paper, pp. 25, London: The University Press. 1898.

Ergot Aseptic; The Pharmacologic Assay of Heart Tonics. By E. M. Houghton, Detroit, Mich. Reprints.

Illinois Medical College, Fifth Annual Announcement. Chicago.

Kentucky University Med. Dept., Announcement for 1899. Louisville.

On the Relationship of the Nose to Diseases of the Skin. By Walter A. Wells, Washington, D. C. Reprinted from N. Y. Med. Jour.

Satisfactory Method of Removing Powder Stains in Fresh Cases. By J. W. Heustis, Dubuque, Iowa. Reprinted from Ophthal. Record.

Some Advantageous Points in Operative Technic of Pelvic Surgery. By J. P. Crawford, Davenport, Iowa. Reprinted from Med. Record.

Vitality; An Appeal, an Apology and a Challenge. By Lionel S. Beale, London, England. Reprinted from the Lancet.

Trade Pamphlets.

The New 1898 Antitoxin Brochure of H. K. Mulford Company, a thorough revision and improvement of that issued last year, is a valuable reference book on the serum treatment of diphtheria. An interesting feature is a section of official reports on the employment of diphtheria antitoxin and a complete symposium of what all recent text-books say of the antitoxin treatment. It will be mailed gratis upon request.

Blennostasine. McKesson & Robbins, New York City.

Catalogue of Medical Publications. G. P. Putnam's Sons, New York City.

Columbia Desk-Pad Calendar for 1899. Pope Mfg. Co., Hartford, Conn.

Hemaboloids, Palisade Mfg. Co., Yonkers, N. Y.

Hygeia Hotel, The. J. G. Nichols, Citronelle, Ala.

Miscellaneous Pamphlets. Schering & Glatz, New York City.

Munson's Typewriter Brochure. Chas. Ervin Hill, Chicago.

"One Food." John Cash & Sons, New York City.

Physician's and Surgeon's Pocket Dictionary of Medical Terms. Sent gratis on request. Katharmon Chemical Co., St. Louis, Mo.

SOCIETY NEWS.

San Francisco County Medical Society.—In the list of officers, recently elected (vide JOURNAL, November 26, p. 1305) by this Society, the president was erroneously given as Wm. H. Davis instead of George William Davis.

Otological Congress.—The Sixth International Otological Congress will be held in London, Aug. 8-12, 1899. Dr. Urban Pritchard, professor of otology at King's College, London, is president. The meetings will, by permission, be held at the Examination Hall of the Royal Colleges of Physicians and Surgeons, Victoria Embankment. The subject chosen for special discussion is "Indications for opening the Mastoid in Chronic Suppurative Otitis Media." The Congress, which assembles every four years, met last in Florence, where a very successful gathering was held under the presidency of Professor Grazzi.

Chicago Medical Society.—A regular meeting was held Nov. 23, 1898, with Dr. Arthur D. Bevan in the chair. Dr. Truman W. Brophy spoke of the results of early operations for cleft palate, and exhibited three or four children upon whom he had operated. The results were excellent in all of them. Dr. Manning presented a specimen from a case of osteomyelitis. Dr. Arthur R. Edwards reported a case of "Cystic Degeneration of the Kidneys," and exhibited specimens, and Dr. C. G. Buford also showed two kidneys from a case of cystic degeneration. Dr. H. T. Byford exhibited a fibroid tumor which had developed subperitoneally, and had attained a size sufficient to completely fill one-half the pelvis. He resorted to abdominal hysterectomy, and described the manner in which he removed the tumor.

Wayne County Medical Society.—The members, on December 1, visited the Ypsilanti Sanitarium, Ypsilanti, Mich. The distance from Detroit to the sanitarium is some thirty-one miles by street car line. Special cars were provided to convey the visiting physicians to and from Ysilanti, and these were crowded to the doors with jolly doctors who had laid aside the arduous duties of their profession for a few hours to enjoy the outing. At the sanitarium a banquet was served and the visitors were afterward conducted through the institution. The Society then assembled in the large operating room of the building and was called to order by Dr. R. H. Honner, president. The following responded to toasts: Drs. C. C. Yemans, O. W. Owen, G. A. Kirker, James Hueston, J. J. Mulheron and J. Samson. Toasts to the secular press were responded to by Mr. Baker and others.

Washington Obstetrical and Gynecological Society.—At the 288th meeting of this society, held November 18, at the residence of Dr. W. P. Carr, Dr. G. Wythe Cook read the essay of the evening, reporting a case simulating peritonitis in a hysteric woman. The patient had been ill for several months, suffering from gastro-intestinal catarrh, and had traveled extensively throughout the country for health. Shortly after she developed marked symptoms of gastric ulcer, and during the attack developed symptoms simulating perforation and peritonitis. Dr. Van Renssalaer was called in consultation for the purpose of operating, but advised delay. The subjective symptoms became more marked, but were not in keeping with the temperature and pulse, which were practically normal. Eventually the case was considered hysteria and all the symptoms disappeared promptly under the administration of asafetida. An interesting discussion, with the citation of interesting cases, was participated in by Drs. Sprague, Van Renssalaer, Stone, H. L. E. Johnson and Bovee. Dr. H. L. E. Johnson presented a large polypus which he had removed from a female urethra. The growth was pedunculated, and grew from a point one fourth of an inch above the dilated meatus. The patient has been diabetic for several years and at one time was treated in a hospital at St. Louis. She had been passing large quantities of sugar, but that ingredient had promptly disappeared after treatment with iodid of potash. Dr. Stone presented a microscopic specimen of the cyst-wall from the specimen of supposed tubal gestation which he had exhibited at the previous meeting.

Philadelphia County Medical Society.—At the last meeting of the section on surgery of this society, Dr. Ernest Laplace presented a new pair of forceps he had recently devised for performing intestinal anastomosis. In order to prove its usefulness the speaker gave demonstrations on performing intestinal anastomosis with the instrument and proved that an end to end anastomosis could not only be more quickly and easily performed, but also that the lumen of the bowel was not lessened. The instrument may be roughly described as a double pair of forceps with long handles, but at an angle of about forty degrees and locked together. Instead of the blades being flat or grooved, each blade has a ring shape, so that the delicate tissues may be easily handled. The advantage of the forceps lies in the fact that one pair may be safely intrusted to an assistant while the operator is able to perform the operation with greater ease and rapidity. Dr. Laplace has given demonstrations upon the cadaver and also upon dogs, and in all instances the utility of the instrument has been proven. Drs. J. Chalmers DaCosta,

Edward Martin, Mordecai Price, Wm. L. Rodman and others, all spoke favorably of the instrument, and thought it possessed advantages over any other device or instrument for intestinal surgery. Dr. Edward Randall read a paper on "Catheterization of the Eustachian Tube" and took the position that the operation should be done more promptly by the general practitioner, who should become familiar with the method. As a medicament he thought the vapor of iodin the best. He preferred a catheter with a straight tip instead of the bulbous, on account of it being more readily introduced into the opening of the Eustachian tube. One of the speakers present dissented from the view taken by Dr. Randall, and preferred the tube with a rounded or bulbous extremity, because of less danger of doing harm in its insertion. The celebration of the semi centennial of this society is to occur Jan. 16, 1899. A committee has been appointed to make fitting arrangements. Dr. J. Chalmers Da Costa will deliver an oration, and Dr. Kerr Boyce Tupper the memorial sermon. The committee having the matter in chargeconsists of Drs. William Welch, chairman; W. W. Keen, John B. Roberts, James Tyson, W. B. Atkinson, George M. Gould and A. H. Cleveland.

Detroit Academy of Medicine.—At the meeting held November 22, the Academy listened to a paper by Dr. Heneage Gibbs, health officer of Detroit, entitled "Sarcoma: Some Points in the Prevention of its Growth." He considers it essential to remember that while carcinoma is developed from normal tissue originating from the epiblast and hypoblast, sarcoma arises from tissues developed from the mesoblast, and is therefore of connective tissue type. Typic sarcoma consists of a mass of round and spindle shaped cells with numerous blood-vessels running through the cells and lying in contact with them. Sarcoma grows from normal tissue which has reached the adult stage before the neoplasm begins to grow, but it first appears as embryonic connective tissue. Malignancy is associated with rapid growth, and the closer they remain to the embryonic type, the more malignant they are. Sarcoma, therefore, grows when presumably healthy tissue has been acted upon by some "influence" of which we know nothing, except that it has some connection with development. Classified according to the method of their growth malignant neoplasms may be divided into: epithelioma, glandular carcinoma and sarcoma. The first starts from squamous epethelium nourished in as normal a manner as any gland in the body. The third type is derived from tissue which is mechanical in function; but which under malignant influence grows and destroys everything on its way. It is nourished directly from the capillaries about the cells; it is therefore a neoplasm made of cells which by the rapidity of their formation promote the means for their destruction because of their low vitality. The cicatricial tissue formed about an old ulcer, while histologically presenting the same tissue as is formed in the early steps of sarcoma, differs essentially in not being under the malignant "influence." The method of prevention of growth in these neoplasms must, therefore, depend upon a study of the growth and development. Local treatment in the first class might stop their growth. In the second form both the circulation and lymphatics must be used and treatment must be local and general. The third form, especially when they approach a normal type of cell, is amenable to operation.

Detroit Medical and Library Association.—At the regular meeting November 21, Dr. E. S. Sherrill read a paper on "The Nature and Treatment of Accidents in Connection with Electricity." He divided accidents into two classes: 1, those arising from contact with an electric current, whether artificial or natural; 2, those from a remote effect not connected with actual contact. He said that death may be occasioned by actual lesion or destruction of tissue or by the arrest of respiration, producing asphyxia. He described the non-fatal cases as those from which there is shock more or less severe with burning of tissue at the point of entrance and exit of the current. He summarized the effects of the electric current as: 1. In fatal lightning-stroke, punctate hemorrhages in various organs have been found and even meningeal and intra-meningeal hemorrhage of considerable size. 2. In fatal shock from commercial currents few autopsies have been reported; the blood is usually found fluid and the viscera congested; small hemorrhages of the serous membranes are frequent. In both these classes there will usually be found the scarred tissue marking the point of contact. Non-fatal cases, he says, have burns of decided severity. There is a period of unconsiousness, usually followed by mental depresion or excitement. The respiration is feeble, the pulse slow and small, the skin cool and the muscular strength lessens. Other symptoms may occur, such as loss of vision, nausea, diarrhea, etc. Such nervous symptoms as anesthesia, pain, hysteria, paresis, and even hemiplegia may occur. He gave the results of experiments on the effects of electricity which may produce death. It was reported at the Medical Congress at Rome that with a current of 1500 to 2000 volts the killing of animals was not sure and easy. It is believed that the more highly organized the animal is the greater the danger from an electric shock. Tesla has shown by a personal test that the alternating current of feeble ampèrage vibrating rapidly is harmless, even when the voltage is high, he himself having taken one half million volts. The arc lights of most cities are supplied by a current which has an ampèrage from 5 to 9 and voltage from 1000 to 2000. The treatment for accidents resulting from electricity should be: 1. Prophylactic. Those employed about electric machinery should wear suitable gloves. In some places employes wear a sort of harness which holds flexible strips of copper insulated and extending up the arms, over the shoulders and down the legs to the feet; in thunder-storms trees are to be avoided; in the house rooms containing stoves or open grates should also be avoided. 2. Medical and surgical. Artificial respiration should be thoroughly tried for at least one hour. The strong reflex influence caused by forcible stretching of the sphincter ani muscle should be tried. Oyxgen gas should be administered. When pain and nervous symptoms occur give hypodermic injections of morphin. Strychnia should be given for depression. Where there is slough from the burns they should be surgically treated.

At the regular meeting November 28, Dr. F. L. Newman read a paper on "Orbital Cellulitis," and gave the following reasons why this disease is of greatest interest to the general practitioner: He is the one most likely to see the case first; diagnosis usually presents great difficulty; the rarity of the disease; proximity of the tissues of the orbital cavity to the brain and the vascular connection with the other orbit. He gave as causes of orbital cellulitis, trauma, pyemia, facial erysipelas, facial boil or carbuncle, inflammation of the antrum of Highmore, phlebitis, purulent meningitis, typhoid fever, scarlet fever and diphtheria; it may also occur idiopathically in very delicate children. He gave as prominent symptoms of the disease, great swelling and redness of the upper lid; pain, increased on pressure; exophthalmus; congested and chemosed conjunctiva; high fever, etc. The disease should be differentiated from periostitis of the orbital wall and orbital growths. The diagnosis was minutely taken up. As an illustration he reported the following case occurring in his own practice: A girl 8 years of age had previously suffered from a sty on the eyelid. On the evening of January 20 she became very feverish and nervous and complained of a pain in the eye, the lid of which had commenced to swell. The Doctor found the child lying on her back with her eyes closed. The right eyelid was red and swollen, the pulse very rapid and temperature 105 degrees. She was extremely nervous. No exophthalmus was observed at this time. He gave

sedatives and an antipyretic. During the night the symptoms became so severe that another physician in the neighborhood was summoned, but Dr. Newman saw the child early next morning. The condition of the child was very much worse; both upper lids were enormously swollen and reddened and the child was now almost in the condition of coma. Another physician was called in consultation and it was decided that, on account of the meningeal involvement, the case was hopeless. The prognosis proved to be correct. The child began having convulsions very soon after and died at 5 o'clock on the 21st, having been ill less than twenty-four hours.

MISCELLANY.

Personal.—Dr. Sanger Brown has resigned from the faculty of Rush Medical College.

A Motto for the Antivaccin Party.—The philosopher, Hobbes, long ago declared that men would dispute the axioms of geometry when they had a strong interest in so doing.

"Philadelphia Medical Journal."—It is announced that, with the close of 1898, the *Philadelphia Polyclinic* will cease publication, subscribers receiving instead the *Philadelphia Medical Journal*. A similar arrangement was made with the *Atlantic Medical Weekly*, which ceased publication recently.

Inhalation of a Tooth Filling.—O'Donovan of Baltimore, in the *New York Medical Journal* of November 26, reports a case of bronchitis and pneumonia caused by inhalation of the filling from a tooth during extraction under nitrous oxid anesthesia.

Ethics of Homeopathy.—A medical gymnasium and bicycle club in St. Petersburg recently expelled a member on discovering that he was a homeopath, which fact he had concealed when applying for membership, but he declined to be expelled, and carried the matter into court, where it was decided in his favor. The club has appealed to the higher authorities.—*Deut. Med. Woch.*, November 10.

Artificial Thyreogenous Exophthalmic Goiter.—Notthaft reports the case of a man, 43 years old, who was ordered thyroid extract for obesity. Within five weeks he took nearly 1000 tablets, each containing 5 grains. For the first three weeks nothing was noticed, except loss of flesh, but after this time dyspnea came on, with swelling of the neck and very rapid loss of weight. Altogether, 30 pounds were lost, and five-sixths of this loss took place in the last three weeks. When examined, the patient had marked exophthalmos, with both Stellwag's and Graefe's signs; the thyroid gland was enlarged and pulsated, and there was a thrill over it; there was fine tremor of the fingers and tongue; the cardiac apex beat was displaced outward, and the pulse was 120 to the minute; there was cough and severe mental depression; polyuria and glycosuria also were present. Under the use of Fowler's solution and after the withdrawal of the thyroid extract, most of the symptoms rapidly disappeared, only the ocular manifestations and the goiter persisting for nearly six months. Notthaft considers the case one of thyreogenic Graves' disease, as the rheumatic pains and headache so common in thyroid poisoning were absent, and all the symptoms of exophthalmic goiter were present. He believes that Graves' disease may be due to qualitative changes in the thyroid secretion, and suggests that the explanation of the occasional good effect of thyroid gland extract in the affection may be attributed to the fact that the patient's thyroid is unable to produce a sufficient quantity of normal secretion, and, being constantly called upon to produce a secretion, gives forth one that is changed qualitatively, thus causing a poisoning that gives rise to the symptoms constituting Graves' disease. He believes, further, that the theories of a hematogenic or organic nervous origin of the disease are disposed of by the absence of any changes in the blood or nervous system that are at all constant or could be considered sufficient explanation for the symptoms. The theory of a pure neurosis, based upon the occasional hereditary transmission of the disease, or its association with other neuroses, and similar arguments is, he believes, after a careful study of the literature, not justified, as such occurrences are probably coincidences. The theory placing its causation in some changes in the thyroid gland is fully justified by the almost constant presence of changes in this gland, both clinically and pathologically by the frequent association of exophthalmic goiter with myxedema, which disease is indubitably connected with the thyroid gland, and by the frequent improvement in cases of Graves' disease after operations upon the thyroid gland. An extensive reference to literature accompanies the article.—*Centralblat. für innere Medicin*, April 9.

Gastric Tetanus.—Sievers describes two observations of fatal tetanus complicating gastric dilatation from small cicatrized ulcers. There are twenty-seven cases of the kind on record, the dilatation usually caused by the cicatrization of an ulcer, and consequently accompanied by "hyperchlorhydrie," but in a few cases there was neither dilatation nor "hyperchlorhydrie," as in Blazicek's case, in which the distended gall-bladder compressed the duodenum. In three cases the ulcer was complicated with carcinoma.—*Rev. Gen. de Path. Int.*, November 5.

Acute Delirium from Auto-Intestinal Intoxication.—Soelder relates observations of six cases, all young women or girls, in otherwise good health, suddenly affected with motor excitement, distress, cephalgia, uninterrupted walking, death following in a week or two from cardiac paresis. The anatomic changes were cerebral hyperemia and edema, intense congestion of the lungs, parenchymatous degeneration of the kidney, heart and liver, and chief in importance, a coprostasis of the large intestine, although there were no indications of digestive disturbances and no signs of increased putrefaction of the albuminoids in the urine. Similar cases have been attributed to the cerebral hyperemia or to a bacterial invasion of the brain, but the toxic lesions of the large organs favor his theory of an intestinal auto-intoxication.—*Rev. Gen. de Path. Int.*, November 5.

Cocain Poisoning.—A considerable proportion of the fatal cases after the use of cocain has been among medical men who have treated themselves for purposes of relieving pain, and have by accident or design injected an overdose. An instance of this kind occurred a few years ago. The body of a young medical man was found at a railway station. In his hand was a hypodermic syringe containing morphia which he had evidently been about to inject as an antidote. He had been accustomed for some time to inject cocain for the relief of neuralgia. On April 18, Dr. Thomas held an inquest at Paddington on the body of the wife of a medical man, who had died after drinking a solution of cocain. Eight weeks previously she had swallowed a quantity of laudanum from a phial which she had found in her husband's bag, assigning no reason for doing so, but telling him immediately after the act. Antidotes were applied and she recovered. On the evening of April 13, she remarked to her husband, "I am feeling ill," and produced a small bottle from her pocket containing a solution of cocain, which she had abstracted from the bag when she had obtained the laudanum previously. Both bottles were duly labeled "poison." She said she had taken cocain and asked that a medical man be sent for, but all treatment was unavailing. All experience shows that care is requisite in administering cocain, as it has again and again happened that small amounts of the alkaloid have given rise to the most threatening symptoms. Two-thirds of a grain injected subcutaneously caused the death of a woman aged 71 years, in five hours, and a man died almost immediately after taking twenty-two grains by the mouth. Persons, however, habituated to its use can take increasingly

larger doses. Among the most striking illustrations of its threatening characteristics are abnormal exaltations of the feelings, loquacity accompanied by mental incoherence, severe sweating, fall of temperature, shallow and irregular respiration, dilation of the pupils, disturbance of vision, nausea, feeble pulse and, ultimately, collapse. In persons suffering from these symptoms stimulants should be given. The inhalation of chloroform has been tried to relieve the spasm. Nitrate of amyl has also been suggested. Some medical men make it a practice to give a prelimary hypodermic dose of from one-eighth to one-quarter of morphia, according to the age of the patient. The physiologic antagonism between the drugs is pronounced, so that while morphin is not an absolute antidote, it is at least most valuable in counteracting the toxicity of cocain. Dr. Griffin, in the *Philadelphia Medical Journal*, has pointed out the variety of susceptibility and idiosyncrasy to cocain which different individuals present. Some patients who are acutely poisoned exhibit maniac excitement, while others are stupid. It is well known that poisoning has followed the use of a dose far short of the maximum therapeutic allowance, even a fraction of a grain having been reported to have caused serious symptoms. There are also instances in which a solution of a certain strength has been used without unpleasant effects, while a repetition of the same dose on a subsequent occasion has caused toxic symptoms. The injection of camphor dissolved in ether and the employment of artificial respiration, have recently been extolled as the best treatment for the acute poisoning. In chronic poisoning by cocain there is one symptom, known as Magnan's sign, which is of considerable importance in establishing a diagnosis when the use of the drug is denied, and is also of importance in other cases as indicating to the physician the necessity for immediate discontinuance of the remedy. This sign is an hallucination of sensation, the patient complaining of feeling some foreign body beneath the skin. This is generally described as being small in size, and is usually ascribed by the patient to the presence of sand, worms or microbes.

Artificial Immunity and Cure of Infective Diseases.—R. Emmerich and O. Löw publish a preliminary communication in the *Munich Med. Woch.* of November 8, in which they assert that the final destruction of bacilli is due to an enzyme which they themselves form, the effects of which are transferable from one kind of bacillus to another. They state: 1. The growth gradually ceases in many cultures, in spite of an abundance of suitable nutrient medium, and this they have found to result from the presence of an enzyme, formed by the bacteria, which in time destroys them. 2. Some of these bacteriologic enzymes are able to destroy other bacteria, even the pathogenic, besides the species from which they were derived. As these bacteriolytic enzymes are also able to destroy pathogenic bacteria in the animal organism they are capable of curing infective diseases. It is an easy and certain process to cure, with the enzyme of the bacillus pyocyaneus, within thirty hours, an anthrax infection progressing to a fatal course. 1 c.c. of this enzyme solution dissolves *in vitro* in twelve to twenty-four hours millions of diphtheria, cholera and typhus bacilli, showing that this pyocyaneus enzyme can also be used for these infections. Even the plague bacillus is destroyed by it. 1 c.c. will dissolve thirty millions of plague bacilli within a few hours. 4. The bacteriolytic enzymes are destroyed in the animal organism and permanent immunity can not be obtained with them, although a few injections will cure the infective disease. But the writers have succeeded in combining the enzyme *in vitro* with an animal albuminoid which makes it last longer in the animal organism and therefore adapts it to immunization. With this highly molecular complex combination they have succeeded in immunizing rabbits against anthrax and guinea-pigs against diphtheria. In all probability the effective principle of an immunizing serum is nothing but a combination of the specific enzyme with an organic albuminoid (cause of artificial immunity). The so-called "agglutination" is the first stage in the dissolving of the bacteria by the enzyme combination. 5. The difference in the behavior of the immunizing sera in the presence of specific, pathogenic bacteria *in vitro* and in the animal organism, depends upon the presence or absence of oxygen in the form of gas. Excluding this completely, *in vitro*, the specific pathogenic bacteria are not only agglutinated by the immunizing serum but killed and dissolved, as was proved repeatedly with cholera and typhus bacilli.

Peptones in the Organism.—A communication received by the Académie de Méd. states that the assumption that peptones are toxic products is due to the impurities they contain, which are easily removed by Gautier's new process. The writer proves their non-toxicity by his experiences with animals, to which he administered peptones by both the gastric and intravenous route, finding that the animals gained rapidly in weight, thus also establishing their great nutritive value. Animals fed with peptones combined with carbohydrates, fats and mineral substances, thrived far better than others without the peptones. They do not produce incoagulability of the blood; they merely seem to augment the vitality and the number of the corpuscles. They can not be used for therapeutic anti-infectious purposes, in intravenous injections, for example, as the peptonized animals succumbed more rapidly than the control-animals. Their use is indicated, however, whenever gastric nutrition with the usual nitrogenous foods is defective. In such cases the ingestion of peptones by the stomach or rectum offers unquestionable advantages. He also establishes the fact that while plants and microbes manufacture peptones and other albuminoid substances from relatively the simplest nitrogenous elements, the animal, on the other hand, does not manufacture albuminoids even from the most complex nitrogenous products. For the animal, therefore, there is nothing that can take the place of the albuminoids.—*Bulletin*, October 31.

Governamental Meat Inspection.—A case is instanced in the *Northwestern Reporter* to show the marked differences that exist between the law as laid down in England and the law as declared in this country in relation to the implied warranty of wholesomeness upon the sale of meat for immediate domestic use. The plaintiff was a woman who bought some pork from the defendant, a retail dealer in meats, who knew that she purchased the pork for immediate consumption by herself and family. The pork was, in fact, unfit to eat, and made the plaintiff and her family ill. She sued for breach of the implied warranty of wholesomeness. The trial court held that there was no such warranty, and the defendant had judgment there; but the supreme court reversed it, saying in the course of the opinion: "In England at common law there could be no recovery, as there was no implied warranty or quality. But the law on the subject as established in England does not prevail here. As a rule, we think the decided weight of authority in the United States is that on all sales of meats or provisions for immediate domestic use by a retail dealer, there is an implied warranty of soundness or wholesomeness." The system of meat inspection by officers of the National Government has been pronounced unconstitutional in the decision rendered by Judge John Rodgers in the United States District Court for the Western District of Arkansas. He set aside an indictment for bribing a Government meat inspector, on the broad ground that the Federal Constitution does not confer upon Congress any power to legislate in reference to the packing of meat in storehouses or the inspection of meat when thus stored. Hence he holds that the attempt to establish the office of meat inspec-

tion was ineffectual, and there is no such officer. Notwithstanding this decision, it is announced from Washington that meat inspection will be continued for the present under the direction of the Department of Agriculture. The new attorney-general thinks that the indictment passed on by Judge Rodgers omitted to state facts which would have shown that the inspected meat was really in transit from one State to market in another, and thus became liable to Congressional legislation as a subject of interstate commerce.

The Roentgen Ray in Tuberculosis.—R. Mühsam reports tests with radiotherapy on twenty six guinea pigs, successful in arresting local tuberculous processes, though general infection was not affected by it (*Deutsche Med. Woch.*, November 10). Ausset and Bedart describe a case of chronic tuberculous peritonitis in a girl of 9 years rebellious to all therapeutic measures, cured completely with radiotherapy when the prognosis seemed very unfavorable. There were fifty seances in all, averaging thirty minutes, the tube 12 cm. from the skin. —*Echo Med. du Nord.*, November 13.

Common-Sense Infant-Feeding.—In the *Medical Record* of November 26, Fischer of New York presents several formulæ to be followed when nature has been unkind and deprived the infant of its proper food—breast milk. For an infant under two months old, to be nursed or fed not oftener than once in two hours from 6 A.M. to 10 P.M. (some requiring an extra feeding at 2 A.M.), he orders the following mixture: Cow's milk 200 gm., water 700 gm., milk sugar 30 gm., to be divided into eight parts, the quantity for each feeding consisting of about 100 gm., or 3 oz. For a child from two to four months old, he orders a mixture of: cow's milk 350 gm., water 700 gm., milk sugar 36 gm., to be divided into seven parts of 150 gm., or 5 oz., and feeding to be not oftener than every two and one half hours. Formula No. 3, for a child from four to five months old, contains: cow's milk 500 gm., water 500 gm., milk sugar 40 gm. This mixture is to be divided into six portions, e. g., three bottles containing 6 oz. and three containing 5 oz. each, the 5 oz. bottle alternating with the 6 oz. bottle every three hours. The child from five to nine months old is to be fed every three hours, the following mixture being divided into three 6 oz. and three 7 oz. portions, and given alternately: Cow's milk 750 gm., water 375 gm., milk sugar 50 gm. Formula No. 5, for children from nine to twelve months old, comprises: Cow's milk 1125 gm., water 375 gm., milk sugar 50 gm. This mixture is divided into eight portions, 8 oz. each, and one bottle given every four hours. Over one year of age, he uses pure cow's milk undiluted, feeding 8 oz. every four hours, the formula being: Cow's milk 1500 gm., milk sugar 59 gm., this quantity being divided into six portions, each containing 8 oz. He emphasizes the necessity of sterilization of everything used in connection with infant-feeding, e. g., cow, pail, stable, etc., also the importance of boiling the nipples immediately after being used, in plain water to which a pinch of salt has been added. They should then soak in salt water until to be again used. If a child takes only half a bottle's contents, the remainder must be thrown away and a fresh bottle be used. He also emphasizes the individualization of feeding, some children requiring food once in three, others every hour. He weighs the child weekly, and if there is not an increase of four to eight ounces during the first three or four months of infant-feeding and several ounces weekly, up to dentition, it is safe to change the method of feeding.

Operating on Wrong Leg.—As the basis of an action for damages sought to be recovered from a practicing physician and surgeon, it was alleged that he was employed to operate upon the plaintiff's right leg, but after putting the plaintiff under the influence of chloroform, wrongfully and carelessly operated upon the left leg, thereby causing the plaintiff great pain and suffering. According to the plaintiff's testimony his right leg was very sore, and from time to time he got medicine from the defendant, until the latter finally advised him to go to the hospital, and on the following morning the nurse prepared him for the operation by shaving the right leg from the knee down, as the operation was to be upon the shin bone, some wash also being put on and the leg bandaged. He was then taken to the operating-room and given chloroform. On cross-examination he acknowledged that the left leg had also at one time troubled him, but maintained that it had healed. The nurse testified that the patient had a swelling on both legs, but prepared the right one, which was a little discolored, for the operation on being told by the patient that was the one. The plaintiff's brother testified that when the plaintiff was on the operating-table and both legs were exposed, the defendant said: "See here! you fellows have made a mistake; you have prepared the wrong leg for operation." But when the defendant asked this brother which leg it was that the plaintiff wanted operated upon he could not tell, stating that he was confused, but would telephone his folks and make sure, which was assented to but not waited for, perhaps because at about that time the father of the plaintiff appeared on the scene, though previously told by the plaintiff not to do it, and when asked if it was the right leg, which was pointed out, said "No, the other leg," though he said he had his mind on that leg all the time, and thought that the defendant could not make a mistake. Thus, according to these witnesses, did the left leg come to be operated upon; and a week or so afterward the defendant operated on the right one. The case was tried before a jury, and the court directed a verdict in favor of the defendant. But the supreme court of Michigan holds, Sullivan vs. McGraw, that the case should have been submitted to the jury for their determination, whether the defendant exercised that degree of care which, under the circumstances, he was bound to exercise, the supreme court considering that there was evidence tending to prove negligence, wherefore it reverses the judgment of the lower court and grants a new trial.

Experimental Surgery of the Heart.—Some extensive experiments are reported from Breslau, in which the hearts of rabbits and dogs were subjected to all kinds of wounds, punctures, incisions, etc., and then sutured, with the result that it is apparent that the heart of the mammal, of the rabbit at least, can stand even quite large wounds if excessive hemorrhage is prevented. The application of a suture even nearly around the heart does not, per se, determine any serious effect if secondary injuries are avoided. It was found that the third, almost the half, of the ventricle could be excised without injury after applying a tobacco pouch suture or ligature above. Several animals were operated by applying a ligature around the ventricle just below the middle, and the heart was then pierced entirely through with a small scalpel just below the ligature, that is, through the wall of the left ventricle, the septum ventriculorum and the wall of the right ventricle. The blade was then drawn downward, dividing the lower portion of the heart into two pieces, opening both ventricles. The wound was then sutured and the ligature removed. One died from the slipping of the ligature; another from sepsis. The other four are alive and well to date (three to five weeks). The danger of hemorrhage is much greater after wounds of the right ventricle than of the left. The sutures included only the pericardium and the upper muscular layers. They must be tied during diastole, as otherwise they tear out. The effect of the operation on the action of the heart was first a slight delay in the next systole, then an arhythmia lasting several minutes. If the heart wall is punctured or incised very slowly and carefully through the different layers it will be observed that the arhythmia only appears during the injury to the pericardium and the endocardium. While the needle is passing through the heart musculature the organ beats with normal regularity.—*Cbl. f. Chir.*, October 28.

Rehabilitation of Severed Parts.—A writer in the London *Lancet*, October 22, refers to certain recently reported cases in that journal, showing the possibility of the restoration of severed parts of the body, even under very unfavorable circumstances. He refers to three cases in which the severed external ear was successfully replaced. In one the circumstances were anything but encouraging. The ear had been bitten off by a horse and was found lying in a stable yard. Neither surgical instruments nor antiseptics were available, and a common needle and thread had to be used. In the other two cases the surgeon adopted the ingenious plan of keeping the ear warm and endeavoring to restore the circulation by hot salt bags. We do not know of any other instances in the attempt to restore severed parts in which this had been done. To what extent it is useful it is difficult to say; at any rate it is rational. Several cases of union of severed finger-tips are recorded. In the *Johns Hopkins' Bulletin* (November, 1892), Dr. Finney published a case of surgical suture of severed finger-tips after seven hours. The middle finger was cut off just below the last joint through the phalanx, the ring finger at the root of the nail. The raw surfaces were freshened and the tips were attached each by four sutures. Dr. Finney used antiseptic dressings, but not solutions, because bichlorid of mercury and carbolic acid produce a thin layer of coagulation necrosis. The wounds united by first intention. In a recent number of the *New York Medical Journal* appears an account of an interesting cure that occurred in the practice of Dr. Laurens. A colored man, in using a heavy axe, cut through his shoe and severed the metatarsal bone of the first toe through the head, completely disarticulating the toe, and also cut off the second toe in front of the metatarsal joint. He was seen four hours afterward. The shoe and sock were cut away and the second toe found separated, while the first was hanging by a mere string of skin, every muscle and vessel being cut. They were united by interrupted sutures which included the tendons. A dressing of iodoform and boric acid, equal parts, was used and a spint was applied. The iodoform had to be discontinued before it proved irritating. Union by first intention occurred over more than half the wound and there was but little pus when granulation took place. On the third day sensibility was present in both toes, and in a week the patient could move them a little. Finally, they were strong, movable and sensible, and except for a little tenderness the foot was as good as ever.

Brachialgia and Brachial Neuralgia.—After eliminating the cases of brachialgia due to rheumatism, myositis, inflammation of the synovial sheaths, an affection of the bones or joints, or to peripheral traumatism. Oppenheim has still 189 cases to consider. In 15 there was a vertebral or medullary affection (caries, tumor, tabes, glioma), with pain in a single arm. In 30 cases there was an evident neuritis, with paralysis and anesthesia, either of an infective or toxic nature; in 6 cases it was consecutive to influenza. Others were caused by the pressure of a tumor (aneurysm of the subclavicular, sarcoma). In 12 cases it was impossible to distinguish between neuralgia, neuritis, myalgia or some other lesion, and in 22 cases there was neuralgia without a neuritis or lesion of the central nervous system, evidently due to diabetes, gout, alcoholism or an acute affection. In 14 cases the pain was only induced by an effort. In the principal group, including 96 cases, there was brachialgia proper, with no points distinctly painful to pressure, but rather a psychalgia, consecutive to hysteria, neurasthenia, hypochondria, melancholia. The cases were chiefly in men, and the pain varied with the psychic condition. In some cases the brachialgia was associated with scoliosis. These brachialgias had developed after a traumatism. In some cases they could be attributed to masturbation, more often to rebellious insomnia. The pain in these cases yields to suggestion. In one patient who had in vain tried nearly every kind of treatment, it yielded to a single injection of antipyrin. Several cases relapsed or resisted all therapeutics. Brachialgia should be carefully differentiated from brachial neuralgia.—*Rev. Gen. de Path. Int.*, November 5.

Ovaries and Marriage.—The position taken by Mr. Justice Hirschberg, in the case of Wendel vs. Wendel, as stated in the JOURNAL of September 17 (page 676), does not meet with approval by the second appellate division of the supreme court of New York. The latter, referring to the decision below, says that it was held that because of the loss of her ovaries the defendant was incapable of conception, and, therefore, of "entering into the marriage state;" and that while this conclusion is in harmony with those higher ideals of the marriage state, which ought not to be disturbed except upon grave considerations of public policy, it is forced to conclude that the effect of such a rule was not fully considered. It goes on to state that it is a fact well known to medical science, and familiar in our common experience, that every woman passes through a climacteric period, usually between the ages of 40 and 50 years, after which she is incapable of conception, and yet it has never been suggested that a woman who has undergone this experience is incapable of entering the marriage state, or that she is guilty of any fraud in contracting marriage. In this latter case the ovaries are shrunken and contracted to a point where they no longer discharge the functions necessary for conception, and in so far as the reproduction of the species is concerned, the one is as incapable of "entering into the marriage state" as the other. There is no essential difference between a woman who, through no fault of her own, has lost her ovaries through a surgical operation, and one who has suffered the same result through the operation of nature, and if the one is incapable of entering into the marriage state, the court can conceive of no process of reasoning by which the other may be said to be capable. It seems to it clear, therefore, that it can not be held, as a matter of law, that the possession of the organs necessary to conception are essential to entrance to the marriage state, so long as there is no impediment to the indulgence of the passions incident to this state. Consequently, it reverses the judgment of the lower court. And as to the contention that the defendant was guilty of fraud in not pointing out her exact condition upon being questioned by the plaintiff, the court suggests that he had not availed himself of the means of information within his reach and suggested by what the plaintiff had told him, and, it holds, that cohabitation for a time after learning the facts constituting the alleged fraud must deprive him of the right to have the marriage annulled on that ground.

Depositions Taken Before Trial.—What it thinks was a novel as well as an exceedingly interesting question was presented to the fourth appellate division of the supreme court of New York, in the recent personal injury case of Ida Green vs. the Middlesex Valley Railroad Company. It seems that at the instance of defendant the plaintiff was, prior to the trial, required to submit to a physical examination, as provided by section 873 of the New York Code of Civil Procedure. This examination was made before a referee, and in the presence of two female physicians, who gave oral evidence before the same referee, and their depositions thus taken were offered in evidence upon the trial. In each instance the offer was objected to upon the ground that the depositions could not be read in evidence, save in the absence of the witness, and that the witnesses were then present in court under subpena. The trial court overruled the objections and permitted the depositions to be read, which ruling was duly excepted to, raising the question referred to. The section of the code mentioned, the appellate division says, is part of a general scheme provided by the legislature for the examination of parties before trial, and, as amended in 1893, it was obviously intended to establish a rule

of procedure by which, in cases of this character, a defendant could ascertain the nature and extent of the personal injuries from which the plaintiff claimed to be suffering, and thereby enter upon the trial of his case with some knowledge of what he would be called upon to meet. The method by which information was to be obtained was not clearly defined by the statute, but it seems to be now settled that the physical examination which it contemplates is but a part of the examination of the party before trial, and that it is to be conducted by the oral examination of the plaintiff, as well as of the attending physicians. But, when this much has been accomplished, the question naturally arises as to how far, and under what circumstances, the depositions thus taken are competent evidence upon the trial. The view of the trial court, as applying to this case, has been referred to. But the appellate division does not concur therein, although it has been judicially stated that the record of the examination, which is placed on file, may be introduced in evidence, and section 881 provides that the deposition, or a certified copy thereof, may be read in evidence by either party at the trial. In section 882, it finds a limitation, which leads it to hold that it is not until a party has shown his inability to produce the witness upon the trial, in order that the jury may have the benefit of an examination of the latter conducted in open court, that he will be permitted to read his deposition, and that therefore the defendant in this case had a right to insist that the attending physicians should be required to give their evidence in the same manner as would have been the case had their depositions been taken separate and apart from the plaintiff's physical examination.

Christian Science.—The *Chicago Standard* has entered a protest against a continuation of the immunity from prosecution for their crimes which the "Christian Scientists," thanks to a general misunderstanding and misapprehension of the phrase "religious freedom," now enjoy and abuse in this and many other countries. The idea that any unfortunate victim of mental and physical lesions, or any shrewd and conscienceless exploiter of human credulity, can defy the law and practice the rites of any cult, no matter how degrading, vicious or dangerous, provided the dupe or the knave takes the precaution to call the cult a "religion," is, of course, a wild absurdity, a delusion, which has no basis in reason or the statute books. "The law," declares *The Standard* with perfect accuracy, "can not interfere with religious opinions unless they lead to infractions of well-known principles of morality and public policy; but in such cases it should act promptly. Mormonism encounters the law when it leads to polygamy. 'Christian Science' should feel the law's restraint when it leads to suicide and manslaughter." That it does both in many instances, is known to everybody who has paid even slight attention to this monstrous and horrible fraud. The case of Harold Frederic is at once maddening and pathetic. All his years the man had lived and fought for the realities, the sanities, and the honesties of life. Finally a cell or a duct in the overworked brain gave way and left him temporarily and partially incapable of distinguishing between the true and the false. Nature, aided by science, would have soon repaired the injury, but at the moment when the clear eyes were darkened and the strong mind was helpless, a miserable creature appeared, stretching out rapacious hands for the sick man's gold. She got it, and Harold Frederic is dead. There is ground for hope, however, that this is not quite the end of the tragic episode. The woman who killed Mr. Frederic has confessed her utter lack of legal qualifications to act as a doctor, and that she accepted fees for treatment. Counsel for the executors warned her, while she was testifying before the coroner's jury, that she was in a "serious position." If England has any justice, she will soon be in a prison, and stay there for a very considerable period. Would that every one of her rivals might bear her company.

The High-Grade Modern Hospital.—Dr. Stephen Smith writes of the new era of hospitals and dispensaries. They are no longer regarded as for the sick poor alone, or for the stranger within our gates alone, but for any sick person, be he poor or rich, old or young, whose malady falls within the range of a large class of diseases. During the first half of the present century the State of New York had but one well organized hospital; the century will close with not far from two hundred such institutions, upward of ninety of which are located within the limits of the Greater New York. The modern hospital is constructed on the segregate plan, which so isolates the various parts and rooms that ventilation of one room into another is, as far as practicable, prevented. The modern operating-room is located, constructed, and managed so as to secure the most perfect purity of the air and the most absolute cleanliness. Skilled service is everywhere required. The resident medical staff is selected after competitive examination; the apothecary is a graduate of a college of pharmacy; the head of the kitchen is a *chef*; the matron is a trained nurse. But perhaps the reform in hospital management which has wrought the most salutary results is found in the department of nursing. Today the nurse of the most ordinary hospital is a person of good education, of the most pronounced correct habits, familiar with the import of those symptoms of those diseases that indicate an emergency, reliable in the use of remedies, and skilled in all the arts of relieving the sick by manipulation. In view of the imperious demands of modern medicine for the best possible hygienic conditions surrounding the patient, for perfect antisepsis in all surgical operations, for the greatest precision in all the details of nursing, it is very gratifying to be able to record the fact that the public is responding cheerfully and generously to these requirements upon it for financial resources. Hospitals of the highest type of excellence are appearing in every community, not only for general disease, but for every variety of human affections which can by any means be better treated in hospitals than at home.—*Charities Review*, November.

State Care of the Insane in Indiana.—The State of Indiana needs more room in her hospitals for the insane; they are not quite big enough and never have been, notwithstanding the expenditure within fifty years of $3,000,000 on their development, and a present capacity for 3300 inmates. The population of the State now amounts to 2,900,000, the number of insane is 4200. Nothing seems to be more disquieting to the average citizen than a call for increase of hospital capacity for the insane. Forthwith it is assumed that mental disease, if not epidemic, is certainly spreading. Commonwealth and citizens should remember that change makes change; that as population thickens the defective element at least maintains its ratio if it does not exceed it; that a ratio must be met, rather than a fixed number, and that the hospitals for the insane should have always a bed ready beforehand for the unfortunate one out of 400 or 600, as the case may be. In every community this is a permanently increasing demand. The prompt and proper care of the insane can only be cured by a wise, liberal and timely adoption of the above policy. This is the humane way of looking at the question: Prevision is needed as well as adequate provision.—Dr. J. G. Rogers, in the *Charities Review*, November.

The Drug Trade in Europe.—An interesting volume of 417 pages has been issued by the Bureau of Foreign Commerce of the United States Department of State, which is a mine of information regarding the conditions of the drug trade in foreign countries. The sponsor of this collection of consular reports, Mr. Joseph Jacobs, a pharmacist of Atlanta and chairman of an important committee in the American Pharmaceutic Association, requested the Department of State to submit a series of questions relating to drugs, chemicals, proprietary articles,

drug stores, pharmacies, laws governing the practice of pharmacy, etc., to the consular officers of the United States in foreign countries. The responses constitute a volume of great interest and value, which will undoubtedly receive much notice, here and abroad, and will serve as a record basis for a long time to come. In Austria, for instance (and in Germany the conditions are very similar), "the law distinguishes between a druggist and a pharmacist, and draws a line between the two which neither is permitted to overstep." The druggist conducts a shop something on the plan of the average drug store here; but the pharmacist requires a university diploma, and can conduct a pharmacy only if he acquires a "concession." The concessions are limited, and attach to a location or are hereditary; a new concession is granted only on the basis of a location distant at least nine and a half miles from the nearest similar establishment, and provided a population of 4000 or more people is tributary to it. This is fine protection for the owner of a concession. In Germany no person can practice pharmacy until he has passed his "state examination"; a foreigner, with a foreign diploma, must pass this examination (requiring academic accomplishments) before he can even become an assistant in a pharmacy. The native candidate, having passed through high school and with a thorough knowledge of Latin, serves three years as apprentice; then three years as assistant in an authorized pharmacy; then three semesters devoted to theoretic study in a German university; and then he is qualified to attempt the final state examination. There is some difference, evidently, between an average "drug clerk" and a German *apotheker* who has passed the examination.—*American Therapist*, October.

Gleanings.—Impermeable stricture of the esophagus consecutive to swallowing "caustic soda," cured by retrograde sounding through a gastrostomy incision (*Munich Med. Woch.*, November 15.)——Fatal case of rupture of the spleen in typhoid fever. Weighed 600 grams. (*Tidsskrift f. d Norske Laeg.*, November 1.)——Carcinoma of the right suprarenal with metastases in the liver, lungs, etc., and the rare picture of a metastasic carcinomatous hemorrhagic fibrinous pericarditis.——Case of rupture of the uterus, related by Heissler in which the ruptured ring-shaped lower segment of the uterus was expelled. (*Munich Med. Woch.*, November 15.)——Bruns reports 81 subperiostal amputations of the leg with extremely favorable functional results and gangrene of the flap in only three cases. (*Beiträge z. Klin. Chir.*, xxii, 2.)——Vienna has no crematory, and consequently the request of Dr. Müller, the devoted victim of the recent plague epidemic there, that his body be cremated to avoid further infection, was necessarily disregarded, as transportation to a distant crematory was out of the question.——Cystoma removed from a woman of 38 years, containing thirty-four liters of fluid. The circumference of the abdomen at the level of the umbilicus was 152 c. Prompt recovery. (*Revista de Med. y de Cir.*, October 25.)——One or two drops of bile introduced under the dura in rabbits through a trephining opening, produce symptoms of severe intoxication; the animals run around and when they fall from exhaustion continue the motions of running. (*Klin. Woch.*, November 13.)——Chronic constipation cured with massage of the hepatic region, especially of the gall-bladder. (*Gaz. Méd Liège*, November 10.)

Societies.

The following recent meetings are noted:

Illinois.—Rock River Medical Association, Sterling, November 22; Will County Medical Society, Joliet, November 22.

Indian Territory.—Indian Territory Medical Association, Wagner, December 6 and 7.

Michigan.—Saginaw County Medical Society, Saginaw, November 25.

Minnesota.—Ramsey County Medical Society, St. Paul, November 28.

Missouri.—Medical Society of City Hospital Alumni, St. Louis, December 1.

New York.—Medico-Chirurgical Society of Central New York, Syracuse, December 1.

Pennsylvania.—Clinton County Medical Society, Lock Haven, November 18.

Texas.—South Texas Medical Association, Houston, December 8.

Detroit.

Appointments.—Drs. W. R. Henderson and G. P. Johnson of Detroit have been appointed by the Wayne County auditors to act as county physicians for the ensuing year.

Health Report.—For the week ending December 3, there were: Deaths 76, under 5 years 18. Births, female 18, male 34. Contagious diseases: Diphtheria, 20, recovered 9; new cases 14, 2 dead; 23 now sick; scarlet fever 29, recovered 6, new cases 14, 37 now sick; smallpox 1.

Louisville.

Duncan.—Dr. Ellis Duncan has just been appointed as superintendent of the Louisville City Hospital, vice Dr. P. C. S. Barbour, deceased. Dr. Duncan is a young man, but thoroughly qualified to undertake the duties, having assumed the duties of the office during some of the time that Dr. Barbour, his father-in-law, was incapacitated. Dr. Duncan has but recently returned from Porto Rico, where he went as assistant-surgeon to the First Kentucky Regiment (Louisville Legion), returning on sick leave. He made an enviable record with the regiment. He has also been appointed as assistant to the chair of abdominal surgery and instructor in gynecology in the Kentucky University Medical Department.

Green.—Dr. Waller O. Green has been appointed a clinical professor of diseases of the rectum in Kentucky University. Dr. Green was for several years the chief of the rectal clinic of the out-patient department of the Kentucky School of Medicine.

Health Report.—Health Officer Allen has just made his report for the month of November. There were 326 births for the month, 181 males and 145 females, 299 white and 27 colored; there were 319 deaths and 69 marriages. The physicians to the poor made 483 visits; 111 nuisances were abated, and 336 animals were removed by the dead animal contractor. Forty-eight cases of scarlet fever were placarded and 35 cases of diphtheria. One hundred and forty-five vaccinations were made by the department, and a number of examinations of milk made, only two of these falling below the standard. In concluding his report, Dr. Allen expresses his satisfaction on the passage of the ordinance requiring the reporting of typhoid fever and whooping-cough and consumption, and expresses the desire that a competent veterinarian be appointed as live stock inspector.

Denver.

Health of the City.—Cases of infectious and contagious diseases reported during the month of October: Diphtheria 53, with 7 deaths; scarlet fever 25, no deaths; typhoid fever 22, with 9 deaths; total number of deaths 158, of which premature and still-births were 15; cases of phthisis contracted elsewhere 24; death-rate per 1000 per annum 11.25; death-rate per 1000 per annum, excluding phthisis contracted elsewhere, 9.63.

Meteorologic Summary for October.—Possible hours of sunshine, 345; total hours of sunshine, 280; mean barometer, 24.771; mean temperature, 49; total precipitation, 1.05; mean relative humidity, 41.0; number of clear days, 16; partly cloudy, 11; cloudy, 4.

Popular Lectures.—Dr. Mary C. J. Love, the Chairman of the Department of Health and Hygiene of the Woman's Club of Denver, has arranged a series of lectures to be given during the winter by local physicians on the following subjects: "The Nervous System," S. D. Hopkins; "How We Breathe and How Our Blood Circulates," Josephine Peavey; "Intelligent Womanhood," M. C. T. Love; "Foods, their Chemic Significance and Values," Henry Sewall; "Nutrition and

Feeding of Young Children," Eleanor Lawney; "Puberty and Adolescence," Mary Barker-Bates; "Diseases of the Will, and Power of Suggestion, Hysteria and Hypnotism," J. T. Eskridge; "The Eye and the Ear, their Care and Protection in the Young," Jean Gale; "Women as Mothers," M. C. T. Love; "Sanitation and Hygiene of Home," W. P. Munn; "How Much Physiology and Hygiene Shall be Taught in the Higher Grades of Public Schools—Shall Men and Women be Employed to Teach Physiology to Unmixed Classes?" Leonard Freeman, Mary H. Barker-Bates.

TO PREVENT THE SPREAD OF CONSUMPTION.—The City Improvement Society of Denver has sent out the following note to all physicians residing in the city: "Realizing that physicians can do more than any one power to prevent the spread of consumption, and to insure sanitary reform in the matter of non-expectoration on the sidewalks, to the physicians of the city we therefore appeal for co-operation, that by instructing their patients not to spit on the sidewalks we may have a cleaner and more healthful city." City Attorney Norris has prepared a bill, as follows:

Be it enacted by the city council of the city of Denver:

Sec. 1. It shall be unlawful for any person to spit upon the floor, or any part of any street car or elevator, within the city of Denver.

Sec. 2. Any person violating the provisions of this ordinance shall upon conviction be fined not less than $3 nor more than $5 for each offense; and the conductors of all street cars and the pilots of all elevators are hereby authorized and empowered to enforce the terms of this ordinance.

Washington.

REPORT OF THE HEALTH OFFICER.—The report of the health officer for the week ended November 26, shows the total number of deaths to have been 92, 52 white and 40 colored. The principal causes were: Apoplexy, consumption, diphtheria, diseases of brain, heart and kidneys, pneumonia, typhoid fever. There were 97 births, 61 white and 36 colored. At the close of the week there were 127 cases of diphtheria and 117 cases of scarlet fever under treatment. The special report on the death from yellow fever shows that the death from this disease, which occurred on the 18th ult., was the first ever recorded in the District of Columbia. The deceased was a civil engineer and arrived in New York City, on the steamer *Allegheny*, November 16, from Greytown, Nicaragua, via Port Limon, Costa Rica, an infected port. The steamer touched the latter port November 7, and during the voyage the deceased was taken sick, but was able to pass the quarantine officers at New York City, arriving at Washington November 16, where he registered at a hotel, going immediately to his room. At three o'clock on the morning of the 18th, his condition attracted the attention of the hotel authorities, who summoned medical aid. Dr. A. Barnes Hove, formerly resident physician of the Emergency Hospital, responded, and upon seeing the black vomit and learning that the patient had been in a port infected with yellow fever, suspected the infectious character of the disease, and called consultation, which resulted in the positive diagnosis of yellow fever. The urine showed the presence of albumin, without casts, and an examination of the blood failed to determine the presence of a malarial parasite. The patient died comatose at two o'clock the same day. The postmortem held showed the characteristic lesions of yellow fever. The health officer does not anticipate the development of other cases in the District at this season. The usual newspaper excitement followed the report of the case, and as a result the nature of the disease has been discussed pro and con.

GEORGETOWN UNIVERSITY HOSPITAL.—Donation day at the new Georgetown University Hospital proved to be a great success. The friends of the Institution, and those interested in the care of the sick poor, sent large donations of money, food, medical and hospital supplies, all of which were gratefully received by the hospital authorities.

TO REGULATE DENTISTRY.—The dentists of the city have prepared a bill to further protect them in the practice of their profession, and will submit the same to Congress for action in the coming session. The bill provides for a local board of examiners to make rules and regulations, and pass upon the fitness of those applying for a certificate to practice dentistry in the District. It is proposed in the bill that examinations be held in June and December, and it provides that no corporation, not incorporated by Act of Congress, shall practice in the District without special permit from the Commissioners. A fine of $30 is provided for violations. The Board will consist of five reputable resident dentists who shall elect their own officers and issue all licenses to practice. It also provides for the revocation of license, for just and sufficient cause.

DR. IRVING C. ROSSE sailed for Europe on the 26th ult., for a few weeks' vacation.

DR. J. J. ULLOA, of Costa Rica, and Major John V. R. Hoff, U. S. A., of Pan American fame, are visiting the National Capitol. Dr. Ulloa is with the Costa Rican President, now on official visit to the U. S. Government.

BOARD OF TRADE OF WASHINGTON.—At the meeting of the Board of Trade, held on the 30th ult., Dr. W. W. Johnson was appointed Chairman of the Committee on Public Health and Dr. H. L. E. Johnson a delegate from the Board to the meeting of the National Pure Food Congress which convenes in January next.

London.

A MOST remarkable and, from a medico-legal point of view, most important case, was reported to the Hunterian Society, on November 23, by Mr. J. H. Yargett. The stomach and esophagus of a child, at ten months, were shown, containing rather unusual foreign bodies. The patient had been brought to the hospital suffering from severe dyspnea and dysphagia, with a history of having suddenly choked while eating a piece of brown bread. Exploration with the finger and probe revealed nothing that would account for the dyspnea and, thinking that the fragment of crust probably present in some pouch of the esophagus, would soon soften, the child was kept quiet and carefully watched. In a short time the dyspnea subsided, although the dysphagia persisted, but the child seemed unaccountably weak and depressed, symptoms of broncho-pneumonia developed and it sank rapidly, and died in three days.

At the necropsy, the lungs were found extensively consolidated and the bronchial passages full of bloody mucus and muco pus. Upon opening the stomach, two small corks were found, of about the size which would fit an ordinary two or three ounce bottle, and it was naturally supposed that one of these had injured the pharynx in swallowing and given rise to the trouble.

But when the pharynx was laid open to discover the site of the abrasions, the knife struck upon a much larger cork, completely imbedded in a pouch upon its posterior wall. The cork was of the ordinary cylindric shape, one and one-fourth inch long by three-fourths of an inch thick, and was so deeply sunk in the wall of the pharynx, just at its junction with the esophagus, that its anterior border barely projected into the cavity of the gut. The singular thing was that so large a foreign body could have formed a pouch in the wall of the pharynx and passed out of its lumen so quickly, so as to permit the passage of a probe, and even the taking of a certain amount of milk shortly before the child's death.

But the most interesting developments occurred at the inquest. It was discovered that the mother of the child had lost no less than five other children under two years of age, all of whom had been insured, as was also the case with the infant under consideration. Neither the mother nor the nurse in whose care the child was left during the day could give any light as to how the corks came there; on the contrary, they vehemently repudiated the suggestion that it had ever had

corks or bottles to play with, and even declared that there were no corks in the house and had not been for weeks! In spite of these facts, however, the sapient twelve declined to see anything suspicious in the case, and one of the jurymen gravely suggested that the corks might have got into the gullet by the doctor, who saw the child before it was taken to the hospital, using them to prop the child's mouth open while he examined it! Another nineteenth century Newton was sure that, a hospital being a place where sick folk did congregate, there must have been plenty of medicine bottles about from which the child could easily have gathered two or three corks. And with that low distrust of our profession which marks the vulgar mind, several witnesses had to be called and examined to disprove these asinine suggestions.

Finally, the "bulwark of our liberties" got itself delivered of the illuminating verdict that the child came to its death by means of corks in its stomach and gullet; that there was no evidence to show how the corks were introduced, but that the jury were of the opinion that they were in the child before Dr. —— was called to attend it!! Comment is superfluous, but it would be well for the profession to bear this new possibility in mind in cases of sudden death in heavily-insured children.

Philadelphia.

RETURNED.—Dr. John Packard, who has been spending the past few months in Europe, arrived home during the past week.

IMPROVING.—Prof. John Ashhurst, who has been confined to his bed for the past few months, from two mild attacks of apoplexy, is now greatly improved and hopes are entertained for his complete recovery.

CONVALESCENT.—Dr. William Pepper, Jr., who has been suffering from typhoid fever for the past few weeks, at the University hospital, is now convalescent. He will leave about December 10 for a trip to Europe.

PHYSICIAN INJURED.—Dr. Robert M. Given, a member of the medical staff of the Pennsylvania Hospital, was recently thrown from his carriage, sustaining several lacerated wounds of the face and contusions. The coachman sustained a fractured leg.

MORTALITY STATISTICS.—The number of deaths during the week just closed was 399, a decrease of 50 over last week and an increase of 8 over the corresponding week of last year. Of the total number of deaths, 118 occurred in children under the age of 5 years.

HEALTH OFFICER AND QUARANTINE PHYSICIAN.—Owing to the results of the recent election and the selection of Governor Stone the two above-named positions will be left open unless the present incumbents are reappointed. The health officer of this city receives a salary of about $7100 annually, while the quarantine physician receives $5000.

STERILIZED MILK SOCIETY.—The Sterilized Milk, Ice and Coal Society, through its founder, has asked for contributions in order to carry on its work during the coming winter. When it is considered that through the influence of steriiized milk the death-rate of children is greatly reduced, it will be seen what an instrument for good this Society may become.

MEMORIAL MEETING.—A meeting commemorative of the life and works of the late Dr. William Pepper was held in the chapel of the University of Pennsylvania November 29. The committee having the matter in charge was composed of representatives from the University of Pennsylvania, American Philosophical Society, Franklin Institute, Academy of Natural Sciences, and other public institutions of the city. Governor Hastings presided, and speakers were present to represent the different institutions with which Dr. Pepper was identified.

SMOKER TO UNIVERSITY ALUMNI.—The Alumni Society of the Medical Department recently gave its semi-annual "smoker." A spirit of patriotism pervaded the banquet hall and Dr. John Guiteras spoke in glowing terms of the victorious army, while Dr. Edward Martin complimented the "woman nurse," who did much to lessen the pangs of disease and keep down the mortality.

FOOTBALL CASUALTIES.—One of the papers here has kept a list of the casualties reported during the past year, as follows: Number of collar bones broken, 5; legs broken, 4; ribs broken, 4; skulls fractured, 3; torn ligaments in leg, 3; shoulders broken, 2; besides broken nose, concussion of the brain, ruptured kidney, broken wrist, collar bone dislocated, knee dislocated, cartilage of ribs torn, ankle broken, and thumb broken. Internal injuries and twisted legs are hardly considered as casualties.

DIPHTHERIA COMMON.—The northern section of the city, particularly around Nicetown, is being stirred up over the spread of diphtheria among school children. Investigation recently made showed that several children attending St. Stephen's Roman Catholic church were suffering from the disease, and one had died, while at the Asa Packard school two deaths had occurred. It is stated that the greatest care is taken at the schools to prevent the disease from spreading, and that upon the first observance of any complaint the children are immediately sent home with a note to call in a physician. Several children attending the Cayuga school have also been afflicted with the disease. Dr. Charles S. Means, a member of the Common Council, recently introduced a bill providing that all the children who attend the public schools of this city, after Jan. 1, 1899, shall be injected with antitoxin, for the purpose of immunization from diphtheria, and further, that the Director of Public Safety be directed to instruct the Medical Inspector of the Board of Health to enforce the provisions of this ordinance.

GOVERNMENT ALLOWANCE FOR SICK SOLDIERS.—At a recent meeting in the rooms of the National Relief Association several representatives of the hospitals took the position that since the hospitals volunteered to care for the soldiers, therefore they would accept no compensation whatever. Major Peyton, who has charge of all sick soldiers in Pennsylvania, stated that the Government was unwilling to accept charity for its soldiers and desired to pay all who have had charge of the work. Those hospitals and other organizations who have defrayed the expenses of hospital trains to Camp Meade and elsewhere will not be reimbursed for the outlay. It was finally agreed that the Government would pay the hospitals at the rate of $1.00 a day for each sick soldier. A vote of thanks was passed for the courteous treatment given the hospitals by the War Department, as well as to Major Peyton, the representative of that Department.

FINANCE COMMITTEE.—The Finance Committee of the city council has been working at the usual budget of expenditures for the coming year, but about the only two items of interest to physicians are the salary attached to the position of physician to the county prison and appropriations for charity and corrections. It seems that the actions of prison inspectors have been called in question relative to the fact that Dr. Butcher's salary as physician has been raised from $1500 to $1800 a year. The increase was referred to a sub-committee. As to charities and corrections, the department has asked for an increase of $60,000 for the purpose of enlarging the insane department of Blockley Hospital. While the appropriations for the Bureau of Charities and Correction were $481,968 in 1898, it is hoped that $597,918 will be appropriated for the coming year.

GERMANTOWN CHILDREN'S HOSPITAL.—The board of managers of the Children's Hospital of Germantown is still busily engaged in raising the necessary funds for the establishment of the institution on a firm basis. An appeal for contributions has been made with a liberal response. It is now proposed to raise sufficient funds for the present needs by giving a series of entertainments, and up to date arrangements have been completed for this purpose.

SOPORIFIC REFORM.—Whether or not the cares and vexations incidental to public and private receptions are conducive to long existence may be demonstrated by the soporific reform recently set on foot in a neighboring city and taken up by society dames in Philadelphia. At any rate, many leading lights in upper tendom applaud the movement and say, "give us more sleep." While at present the movement is only a fad, in time it may prove to be beneficial, not only to the devotees, but to posterity as well.

CONTRIBUTIONS TO THE GERMAN HOSPITAL.—While Donation Day was most inauspicious for visitors, a number of contributions were received by mail, which makes the record compare favorably with that of former years. The donations consisted of a large quantity of groceries, boots, shoes, dry goods, etc., and $7,294.36.

PRESBYTERIAN HOSPITAL.—Owing to the fact that this hospital has been lately taxed to the utmost in caring for charity cases and soldiers, and to meet the expenses brought about by the construction of new operating-rooms, a receiving-ward, and the Dulles' memorial ward, it asks for an increase of income amounting to $20,000. In the appeal it is stated that $250,000 added to the permanent funds of the hospital would enable them to make good use of all appliances and to meet the more pressing demands made upon the service.

NATIONAL RELIEF CONTRIBUTIONS.—Mr. George C. Thomas, treasurer of the National Relief Association, makes the following report: Cash previously acknowledged, $78,487.29; cash and supplies, $769.19; value of supplies to date, $40,345; grand total, cash and supplies, $119,601.48. At a recent meeting of the Executive Committee, officers were notified that they would soon be expected to file their reports, to be turned over to the Government. Governor Hastings made a speech and tendered thanks to the Commission in behalf of the State for the excellent service they had rendered. It is stated that 431 families and 1386 individuals are still being cared for by the Commission. A list was also made of the number of soldier patients admitted to the Philadelphia hospitals to date, there being 2238 men, with 108 deaths.

OF MEDICO-LEGAL INTEREST.—A case which has attracted considerable public interest is now being tried in the court of oyer and terminer in this city. Mrs. Mary E. Zelner stands charged with poisoning her aged husband. At the trial expert witnesses were present to give testimony regarding the nature of certain drugs apt to cause the symptoms and pathologic conditions set up by certain persons. Dr. John Marshall, dean of the medical faculty of the University of Pennsylvania, was one of the first witnesses and stated that he had been supplied with portions of the liver, brain, intestines and muscular tissue of the exhumed person, and that over half a grain of strychnin had been thus obtained from these tissues, which he thought was consistent with a poisonous dose of the drug. Dr. Henry W. Cattell, coroner's physician, testified that he had conducted a postmortem examination. Dr. Horatio Wood was then called, and in reply to a question by the district attorney, stated that he was thoroughly acquainted with the effects of strychnin. Having heard the testimony of previous witnesses that the drug had been found in the tissues of the body exhumed, he thought it practically certain that only a small proportion of the poison had been obtained. On cross-examination his testimony remained unshaken.

UNCOMMON CAUSE OF DEATH.—Paul Miller, a child 6 years of age, while feeding chickens, placed a grain of corn in his mouth. It descended into the trachea; all efforts to remove it were futile, and death ensued.

OVERCROWDING OF INSANE.—While the accommodations at Blockley Hospital were originally intended for only 1000 persons, there are at present 1400 insane confined within the different wards.

CONVALESCENT TYPHOID PATIENTS.—Nine soldiers who have been treated for the past few weeks for typhoid fever, at the Presbyterian Hospital, have been discharged. The men were brought to this city during the month of October from Camp Meade.

RACE QUESTION RAISED.—Students of the Jefferson Medical College have passed a resolution providing that a committee be appointed to determine whether or not there is a gentleman not altogether white who enjoys the facilities offered by that time-honored institution. If such is the case an earnest protest will be made to the dean.

DIPHTHERITIC PARALYSIS.—George Cromm, a child four years of age, after eating a piece of scrapple, suddenly died. A history of having recently suffered from diphtheria, and a subsequent necropsy, led the coroner's physician, Dr. H. W. Cattell, to the belief that death resulted from diphtheritic paralysis.

CONTRIBUTION TO UNIVERSITY LIBRARY.—Dr. S. Weir Mitchell has presented to the university library two very important historic documents which have come into his possession. The documents were given Provost William Smith, conferring upon him the power to collect funds for the College and Academy of Philadelphia (now the University of Pennsylvania), also to James Jay power to collect similar funds for the College for the Province of New York (now Columbia University). One is dated April 30, 1764, and the other March 13, 1762. The documents are signed by the Archbishop of Canterbury, Archbishop of York, Lord Bishop of Winchester, Provost Smith and the Rev. Dr. Chandler. Various receipts are attached showing that in one instance a contribution of £500 was made by Thomas Penn.

SMALLPOX.—Five cases of smallpox are reported. For several months past urgent measures have been made to determine how many school children were properly vaccinated in order to keep down epidemics of this kind, but the law has been much evaded. The school authorities of the immediate neighborhood have been notified so that the proper precautions may be taken.

UNWHOLESOME MEAT SUPPLY.—At a meeting of the Woman's Health Protective Association, Dr. W. Horace Hoskins, president of the Veterinary State Board of Examiners, is quoted as saying that a thorough inspection has revealed the fact that meat supplied to this city is frequently unwholesome; in other words, that Philadelphia is a dumping ground for "worn out cows."

ASYLUM POLLUTES SCHUYLKILL.—At the last meeting of the trustees of the State Hospital for the Insane, Dr. Benjamin Lee, secretary of the State Board of Health stated that from his investigations, made some time ago, it was found that deleterious material from that institution was allowed to flow into the Schuylkill, and he therefore requested that the condition be relieved. The secretary of the trustees, however, made reply that the Board was powerless to remedy the evil on account of lack of funds. It is now stated that the whole question will be carried before the State Legislature in order that a proper bill may be passed to abate the evil.

CHANGE OF ADDRESS.

Comstock, H. C., from Sioux City, Iowa, to Hutchinson, Kan.
Corkery, T. L., from Fairfield, Ind., to Wilmington, Ohio.
Chaddock, C. G., from 2906 to 511 N. Garrison Ave., St. Louis, Mo.
Crandall, G. C., from 610 to 511 N. Garrison Ave., St. Louis, Mo.
Formaneck, F., from Chicago, Ill., to Wahpeton, N. C.
Lincoln, B. S., from Chicago, Ill., to Missouri City, Mo.
Lawrence, A. A., from Exeter, N. H., to Millville, Mass.
LeMoyne, F., from Port Hope, Can., to 5431 5th Av., Pittsburg, Pa.
Moore, A. H., from Grand Av. and Hawthorne to Dekum Bldg., Portland, Oregon.
Meek, J. H., from Smithfield to Glencoe, Ohio.
Michael, L. P., from Cheyenne Agency, S. D., to New Ponca, Okla. Ter.
McNicholl, T. A., from 140 E. 39th St. to 1919 7th Av., New York City.
Stevens, G. H., from Hotel Madison to 1819 Adams, Toledo, Ohio.
Thomason, H. D., from Missoula, Mont., to 10 N. S. Cal, Huntsville, Ala.
Turner, R. L., from Ellisville to Meridian, Miss.
Wray, W. E., from Jacksonville, Fla., to Janesville, Wis.
Williams, R. F., from Warm Springs to 508 Grace St., Richmond, Va.
Wilson, E. R., from Sidney to 33 Gill St., Columbus, Ohio.

LETTERS RECEIVED.

American Press Clipping Bureau, Chicago.
Bishop, L. F., New York City; Briggs, W. A., Sacramento, Cal.; Brown, Sanger, Chicago; Bell, C., Indianapolis, Ind.
Cheek, J. M., Highgate, N. C.; Corr, A. C., Carlinville, Ill.
Dinwiddie, R. R., Fayetteville, Ark.; Davis, G. W., San Francisco, Cal.
Ellett, E. C., Memphis, Tenn., Eastman, J. R., Indianapolis, Ind.; Eshner, A. A., Philadelphia, Pa.
Farrington, J. M., Binghamton, N. Y.; Fryer, B. E., Kansas City, Mo.; Foor & Kinney, Columbus, Ohio.
Graham, D., Boston, Mass.
Hohn, Geo. A. & Bro., Mansfield, Ohio; Hill, W. H., Gentryville, Mo.; Hubbell, A. A., Buffalo, N. Y.; Holmes, Bayard, Chicago.
Kalousdian, N. M., Malden, Mass.
Lichty, D., Rockford, Ill.; Lusk, Z. J., Warsaw, N. Y.
Morris, Robert T., New York City.
Overall, G. W., St. Louis, Mo.; Opitz, Russell B., University of Breslau, Germany.
Pearce, F. Savary, Philadelphia, Pa.; Preston, C. H., Davenport, Iowa; Parsons, O. M., Rosby's Rock, W. Va.
Register, E. C., Charlotte, N. C.; Riggs, C. E., St. Paul, Minn.
Saunders, W. B., Philadelphia, Pa.
Thompson, J. A., Cincinnati, Ohio; Taylor, L. G., Perryville, Md.; Thorington, J., Philadelphia, Pa.; Tuley, H. E., Louisville, Ky.
U. S. & Canada Mercantile Agency, Chicago; U. S. Express Co., Philadelphia, Pa.
Wiggin, F. H., New York City; Woodson, R. S., Holguin, Cuba.